REVIEWED: THE NEW BLUE G3 TOWER!

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Mac ADDICT 33

We beat the living tar out of it! Find out how it held up!

MAY/99

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Score 16GB of drive space for UNDER $500 (PAGE 31) Make a STUNNING 32-bit icon with transparencies, blends, and more (PAGE 66) Build a SUPER-STEALTH mobile backup unit (PAGE 73) Adobe's TOP SECRET product plans (PAGE 14) 7 snappy comebacks to attacks on the Mac (PAGE 26) Where to nab Apple's shark desktop picture (PAGE 76) Transform your Mac into a video editing SUPERSTATION (PAGE 28) Win 2 MUST-HAVE Aladdin utilities (PAGE 1) Ranked: the TOP 10 best-selling Mac games (PAGE 64) 7 things that Bill Clinton and Bill Gates have in common (PAGE 104) How to install FireWire in your Mac (PAGE 30) Stun your friends with 7 AMAZING FACTS about the Apple logo (PAGE 18) How to fix flaky modem connections (PAGE 16) 5 common jargon traps—and how to avoid them (PAGE 23) 7 ways to know you're a MAC ADDICT (PAGE 11) and more!

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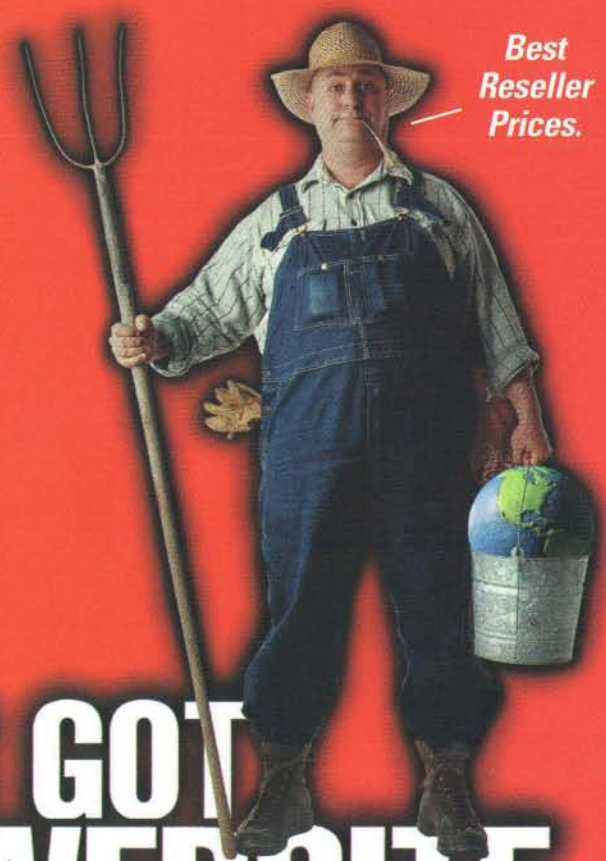

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You're probably wondering, will there be a next time? Keep your eyes on this space. Although we can't guarantee we'll feel this generous *every* month, you won't want to miss out when we do.

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WriteDVD! for Win NT, Win 95 & 98

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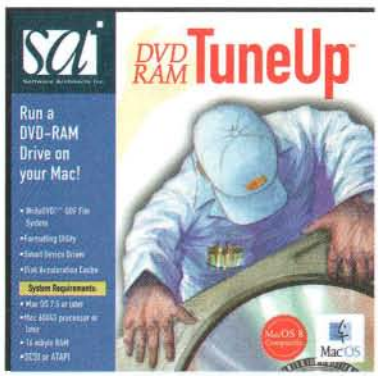

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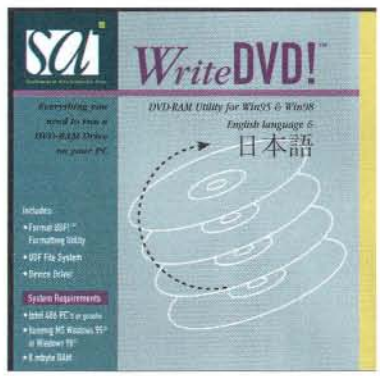

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HAVE YOU HEARD OF THE NEW BAND, the Lentils? They rock!

MAY 1999

Mac ADDICT 33

highlights

20 The Macintosh Bluffer's Handbook

Do you long to be a Mac savant, but clam up when the conversation turns to POPs, WANs, PIMs, and PRAMs? Does the thought of comparing megabits to megabytes make you mega nervous? Take a chill pill, study our "Bluffer's Handbook," and in nanoseconds you'll be spouting geekspeak like Bill Gates on a bender.

BY MARK SIMMONS

28 DV Deeds Done Dirt Cheap

These days, it's not whom you know that gets a film made, it's what Mac you own. So quit making polite conversation with Scorsese's mail carrier and get yourself a digital video camera, a Mac primed for FireWire, and a copy of Adobe Premiere. We show you what to do next.

BY ROBERT CAPPS

36 Command Your Mac

C'mon, admit it—you've always wanted to make like a *Star Trek* character and control your home with just the sound of your voice. The time has come to step up and become one of the few, the proud, the geeky. We teach you how to make your house respond to your voice commands like a prize golden retriever.

BY DAVID REYNOLDS

WHERE'S MY $2? I want my $2! Oh, and another Big Gulp.

NEWLY DISCOVERED! Picasso's Voice Activation Period revealed!

how to

66 Build 32-bit Icons for Mac OS 8.5

Mac OS 8.5 has the prettiest icons around—bar none—but making them has always been a bit of a challenge. Until now, that is. The folks at Iconfactory walk you through the process of building a gorgeous icon, complete with gradient and translucent shadow. You won't believe your eyes!

BY DAVE BRASGALLA AND GEDEON MAHEUX

70 Build an Internal SCSI Device Case

Put a PC to good use by gutting it and stuffing it full of the internal SCSI devices that won't fit into your Mac! It's a lot easier and quicker than you might think, and it keeps one more PC case from growing up to be a PC.

BY NIKO COUCOUVANIS

JUST TRY SNEAKING THIS SUITCASE through airport security. We dare you.

WE HAVE ONLY OURSELVES to thank for the joyous birth of May's cover.

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Volume 4, Issue 5

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every month

8 Editor's Note
Adobe's gone and split its universal document maker in two, making Acrobat even less fun than it used to be.

10 Letters
The first Mac addict writes to set the record straight. Oh, and some of the usual freaks show up, too.

14 Get Info
Adobe has been busy and it shows—with the debut of two brand-new applications, as well as new versions of two of its popular standbys. Plus, we check on the state of 3D on the Mac and find out why FireWire is ready to rock!

18 Scrapbook
This month, we show you exactly what you can do—and should never attempt—with the Apple logo.

42 Reviews
This month we grabbed 11—count 'em, 11—aspiring products that want to hook up with your lovely Mac. Ranging from multimedia powerhouse Director 7 Shockwave Internet Studio to music-sampling-mad Unity DS-1 1.1.0 to bold BBEdit 5.0.1, these apps and more are either solid contenders or wannabes. Find out if Nightfall and Quest for Glory V are all that, and check out the hard stuff—the new blue-and-white G3 tower, Game Wizard, and Alps MD-5000.

64 Power Play
Hey gamerz! We cover the ultimate deathmatch, Unreal Tournament versus Quake III, so check out the carnage. Find out if you can use a PC Voodoo2 card in your Mac, and gaze at the new USB beauties coming soon from CH Products.

74 Ask Us
Once again, our resident Mac lunatic Owen W. Linzmayer dives headfirst into reader questions. Find out what's up with two-button mice, and learn how to get Sherlock to stop forcing its browser of choice upon you. There's lots of other good stuff, and it's just a few dozen pages away!

104 Shut Down
It's goofy, it's wacky, it's zany—it's beyond the abilities of our meager thesaurus to handle. We're talking real Mac humor.

HEY, BABY. HOW you doin'?

Mac ADDICT 33

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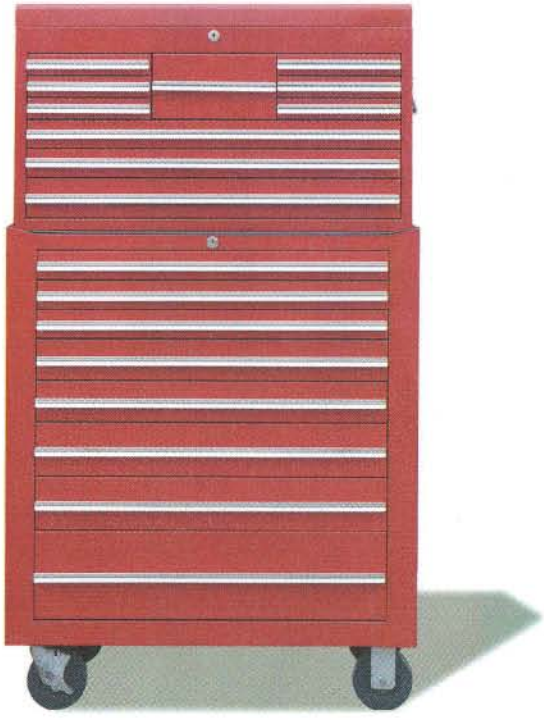

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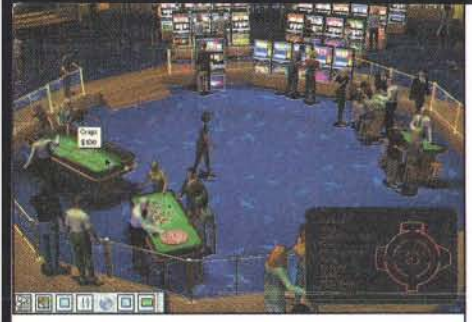

CRAPS! NO ELVIS sightings yet...

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THOUGH ITS INTERFACE ain't that pretty (yet), Linux sure has a cute mascot!

STUCK IN THE HOLE for 30 days? Roasted rat sounds quite delicious right about now.

SO IF I LICK IT, will my tongue turn green?

the disc

Dish Out The Disc...

highlights

Hoyle Casino '99 Demo

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LinuxPPC Live 4.0

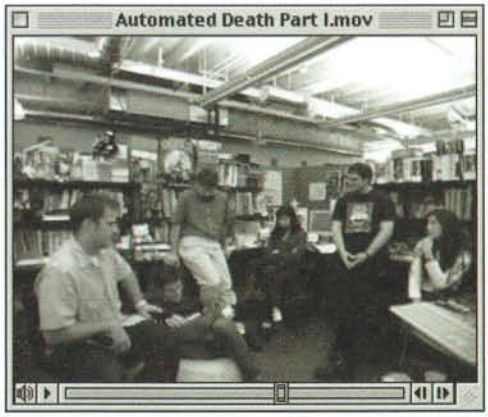
You wanted it—you've got it! If you're looking for another operating system outside the Mac OS, give this one a whirl. Version 4.0 of LinuxPPC (a Unix-type operating system) is much easier to set up than past versions, because you can boot up the system straight from the Mac OS without having to partition your hard drive. The system allows true multitasking, virtual memory, shared libraries, TCP/IP networking, and much more. A word of caution: If you have no idea what you're doing, we strongly advise against trying this stuff.

Nightfall Demo

What dwells beyond the chambers and catacombs in this first-person 3D adventure game? Trapped after an earthquake seals you inside an ancient Egyptian tomb, you must search for a way out while exploring the beautiful virtual 3D surroundings in real time. This dreamlike game allows you to navigate and interact with objects fully and features challenging puzzles.

Apple's iMac Poster (Yum!)

Show your true colors in blueberry, grape, lime, strawberry, and tangerine. Those of you who failed to pick up this freebie at the San Francisco Macworld Expo can now get one of your own. This promo poster for those mouthwatering, juicy iMacs is ready to print out and display. Use it as gift wrap for your PC friends, hang one in every cubicle at the office, or wallpaper your house—the possibilities are endless! Print a singular 8.5-by-11-inch poster, or tape nine segments together to make a 22-by-28-inch poster. Sorry, no scratch 'n' sniff version is available.



Robert Capps tosses in his editorial hat and kicks Kris out of the director's chair to bring you this month's presentation—*Automated Death!* It's a whodunnit murder mystery starring the entire *MacAddict* crew straight from the bright lights of Brisbane.

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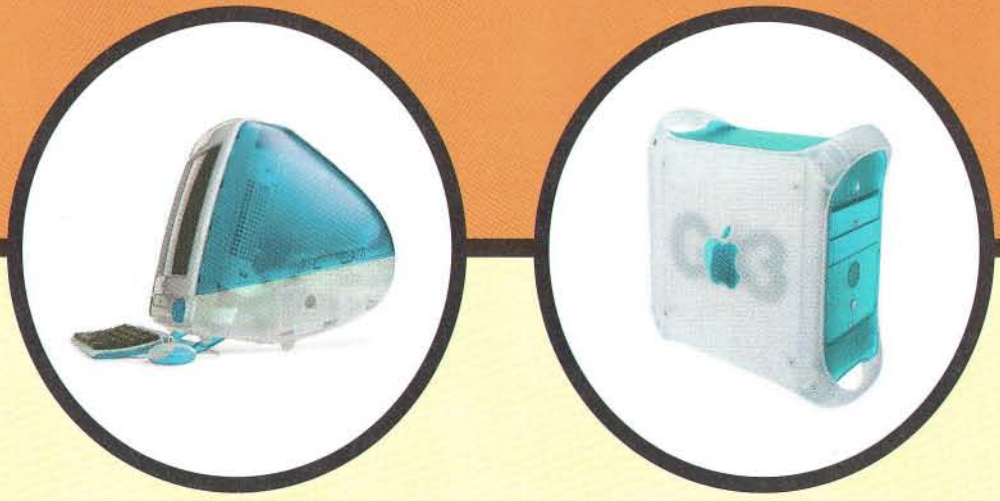

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editor's note

It's my soapbox, and I'll stand up and say what I want, thanks.

Mac users are used to this scenario: A major software vendor releases a new version of a major application—one with traditional Mac roots—only this time, the company releases the product for Windows first. It treats Mac users as second-class citizens, scheduling the Mac version to arrive "real soon now."

This time Adobe is the culprit, and it's enough to drive you nuts. Adobe Acrobat 4.0's most compelling features—digital signatures and the ability to capture Web pages as PDF files—are Windows only. Mac users can look forward to improvements to the core Acrobat Distiller application, but the Windows version includes those additions as well.

With most applications, this wouldn't be such a big deal, but here's why it is with Acrobat. At its core, Acrobat is about creating universal documents—ones that work the same way on *any* platform: Mac, Windows, or Unix. Now, version 4.0 of Acrobat changes all that: Not only do Windows users get more functionality out of the basic program—they can also create documents that don't function the same way on the Mac platform. These documents have digital signatures embedded, and though Mac users can view the documents, they can't modify or alter the signature. To reconcile this disparity, Adobe makes a distinction between the ability to display a document universally, and what people can actually do with it. As long as the document looks the same across platforms, that's good enough for Adobe.

So why did Adobe slight the Mac market with a limited version of the product? Sheri Schurter, group product manager for Acrobat desktop products, says it's a matter of meeting the demands for requested features. Adobe did extensive research into how both Windows and Mac folks used Acrobat, looked at the most-requested features, and built the ones Windows folks wanted into the Windows version via plug-ins, while rolling Mac users' requests into the core Acrobat engine. The resulting application gives extra benefits to Windows users.

Adobe confronted delaying the product to allow the Mac version to come up to speed; releasing the Windows version and delaying the Mac version; or releasing both at the same time as soon as possible, then working on bringing the Mac version up to speed. Adobe is planning to update Acrobat with digital signatures and Web capture, but hasn't set a timeframe for the update's release. Schurter said that given the same set of circumstances, she would follow the same strategy again.

Adobe CEO John Warnock wrote to some of the Acrobat Talk mailing list via email, stating the following: "The differences in platform are only in the timing of availability. A number of the features (Web capture and digital signatures) were developed on Windows first. We are porting these to Mac, but did not want to hold announcement and delivery for those features. These will show up as plug-ins on our Web site as they become available. I am committed to platform parity on all products where there are substantial customer counts on each platform (this includes Acrobat)."

I don't think that Adobe is going to abandon the Mac anytime soon. It's good to hear the head honcho at Adobe confirm the company's commitment to the Mac, but there's something about the whole affair that leaves me feeling unsettled, the sense that as a Mac user, I am an afterthought that gets tended to only if it screams loudly enough. Well, Mac users screamed loudly about this right away, and Adobe says it's fixing the problem. Let's hope the company does.—*David Reynolds*

At its core, Acrobat is about creating universal documents—ones that work the same way on *any* platform: Mac, Windows, or Unix.

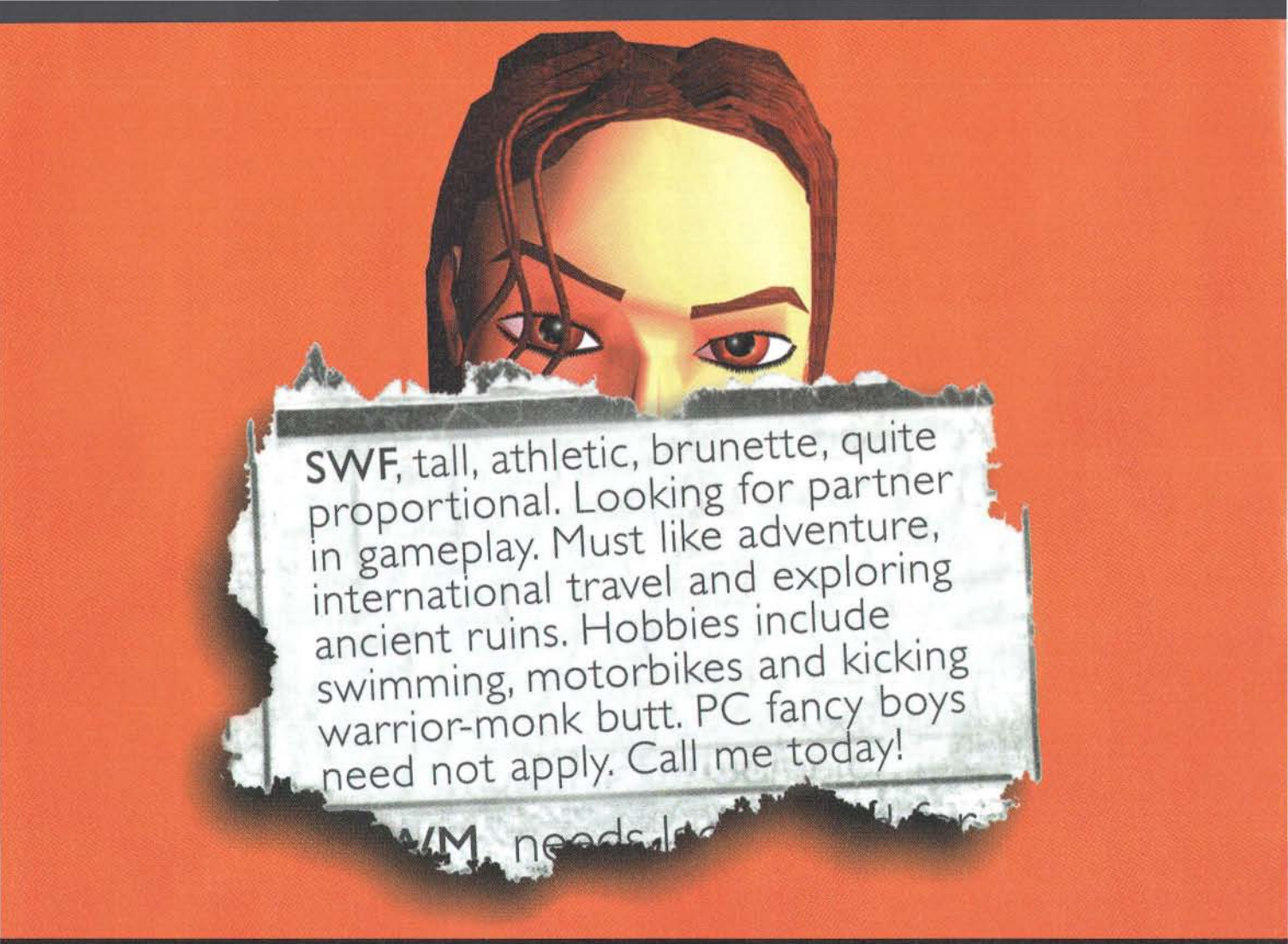
For the Record

In a recent review of the ixMicro ixTV television tuner card (Nov/98, p74), I stated two items with which ixMicro took issue: one, that purchasers of the ixTV card must call the company to get an activation key; and two, that closed captioning doesn't work well with the product. The company has a point in its complaints, so I would like to take a minute to clarify these issues.

Bryan Speece from ixMicro wrote to let us know that those who buy the card should be able to get their activation code from a sticker in the manual and shouldn't have to call the company at all to get up and running. Although we couldn't locate the sticker on any of the documentation we received, a couple of readers wrote in to tell us that it indeed included the activation code and that no phone call was necessary.

Speece also mentioned that the problems we experienced with closed captioning were probably due to a weak TV signal. It's true—the signal going into our card was indeed weak, as we mentioned in the review as a possible cause of closed-captioning problems, but this wasn't the only source of problems. We also experienced a conflict with a PCI SCSI host adapter card installed in the same Mac, and it took some tweaking to get things right. More important, though, neither of these issues was the ixTV card's fault.

This leads me to the larger issue of how *MacAddict* handles reviews. We look at products from a user's perspective, using them as we would at home or at work, instead of relying solely on benchmarks. That lesson came through loud and clear with our testing of the new blue-and-white G3 tower from Apple. When we put it up against a 9600 we'd upgraded to comparable stats (a 400MHz G3 processor, high-speed SCSI, and tons of RAM), our benchmarks showed that the 9600 was as fast as or faster than the new G3 tower—except when it came to video, where the G3's Rage 128 chip dominated the testing like you wouldn't believe. But when we started *using* the tower with apps such as Photoshop and Unreal (which looks amazing), it became clear—benchmarks don't tell the whole story. The new G3 kicks butt.—*DR*



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letters

A rankled Raskin writes in to set the record straight—in full CMYK color!

This Month

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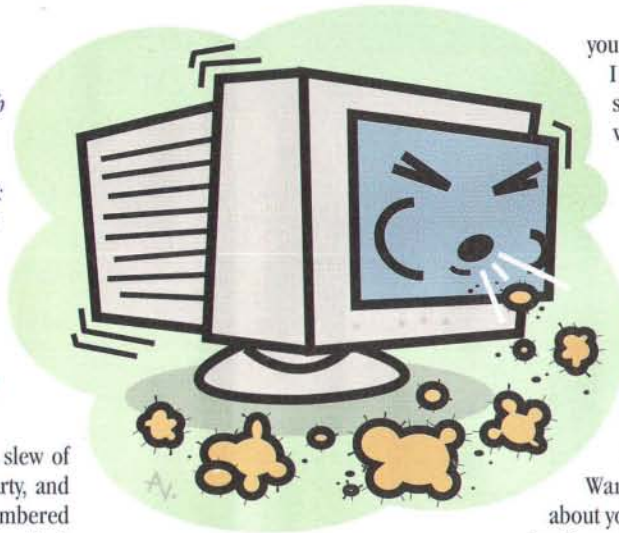


Illustration by Adam Vanderhoof

Excellent! Party On, Dude!

I had forgotten that I had invited a slew of high school dropouts over for a party, and all I had were two Enya CDs. I remembered at the last minute and almost cancelled. How could I have all these degenerate kids in my house and expect them not to wreck the place if I put on Enya? I'd had a song in my head all day long and couldn't remember what it was. I thought, "If I only had the CD that song is on, I could have this party and still have a bed to sleep on come tomorrow night." Then it struck me: That song I've been groovin' to was that track from your disc. So just as the first moped pulled up, I hooked my Mac to the stereo and double-clicked the tour application. I turned up the music just quickly enough for it to strike the first lonesome travelers as they skipped to the door. Well, the party was a blast. Everyone loved your groovy music. But they stole my bed, so I guess even really cool music can't stop people from depriving you of a nice bed to sleep on. Oh, well. I still have that old cot from my scouting days around here somewhere.—Jim McGonigal

Not Unless He Hacks Up a Hairball

I recently moved my computer, so now instead of being up against a wall, it's below a window. My cat loves sitting on top of the monitor. I thought that this was fine, until I read the warning in your "Void Your Warranty" feature (Feb/99, p24) about your monitor's picture tube imploding if you try to paint it. Could all the cat hair shed into the monitor cause it to self-destruct?—Hannah LaLande

It's a Color-Sucking Twister

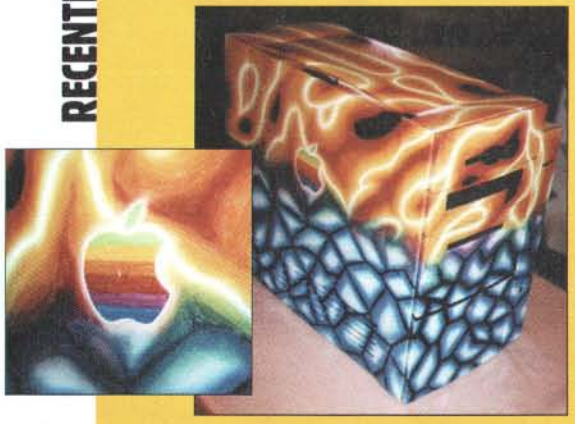
Aunty Em! Aunty Em! Although most of the magazine is frolicking in the Land of Oz, it seems Kansas is seeping though in some places. Look at page 22 of the March issue. The wonderful new Apple monitor is in gray scale! And then back on page 15 of the same issue, Marissa (and her beer) seem to think gray is the way to be! Don't ever let this happen again, or I will be forced to come over and smack you repeatedly with my big CMYK stick!—David Heinecke

Uh, yeah—we meant to leave those images as RGB. It's a nice effect, don't you think?—DR

Funny. That's Why We Avoid Canada

So anyway, a few years ago I met a real nice American here in London. We liked each other a lot, got married, and discussed which country we should live in. I referred to the many *MacAddict Letters* pages I have (yes, we do get the magazine here in the United Kingdom) as an argument for staying here due to the mental instability and general scariness of Americans, and two years

Recently Sighted



Jaya Chaitanya Cappelletti sent us these pictures of his Mac, which he painted using oil pastels and acrylic paint and then sprayed with a sealant. He used KPT Texture Explorer and Photoshop as his inspiration.

Peggy Riou sent in this picture of her son, Luthor. He's sitting up front in this class photo, proudly wearing his Apple shirt. It starts early, after all.

You Know You're a Mac Addict When...

...you wager your paycheck on progress-bar racing.

...ClarisWorks 2.1 is your office suite of choice.

...you put pictures of the iMac, PowerBook G3, and G3 tower on your LC 630's desktop.

...you spend an entire week deciding which color iMac to buy, then buy them all just to be sure.

...you demand a commission after selling 10 iMacs at a store you don't even work for.—Jeff Schmidt

...you always include blueberries, strawberries, limes, tangerines, and grapes on your shopping list.—Jaime Arroyo

...you have the phone number to Apple's corporate headquarters programmed into your home phone.—Nikki Echler

later we are still here in London. Need I say more?—David Hutchinson

What Kind of Graphics Card?

I wrote Bungie asking if it could make a 680X0 non-3D stickman version of Myth, and Bungie said no, but did include a sort of beta nonmoving stickman Myth, which I have written in to share with all 680X0 gamers everywhere!

Here it is:

```
  0    XX
 /|\/   { |}
 ))    ||
warrior   thrall

/0 x
|\) x{}|
(?  ||}
AFTER BATTLE
```

And that is exactly how they sent it! Isn't it great?—Ben Lewis Evans

Reuben, Write Home!

I sure hope Reuben hasn't gotten married. I expect one of his heartwarming letters every time I open a new mag, but haven't seen one in a while. What happened?—David Kludt

You're by No Means Average

In the time it takes the average 5-foot, 9-inch person to walk 20 feet and put in a contact on the first try, Sherlock can find 127 items for the phrase *meat freezers*. Simply amazing!—Jonathan Claydon

An NT Box Is an Open Box

Ever notice how much NT Box sounds like Empty Box?—Brandon Dimcheff

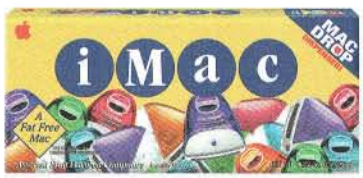
That's a Crime in the South

Hickory dickory dock
My Mac I overclocked
Your instructions though terse
Increased my megahertz
Hickory dickory dock.
—James Gill

Check the Want Ads

The assistant art director suggested I didn't have enough to do. Won't he be surprised? I'm already practicing in the mirror for my next career move—"Would you like fries with that?" Yes, this was formerly a box of Dots, made by Tootsie Roll.—Lou Spirito

Yum.



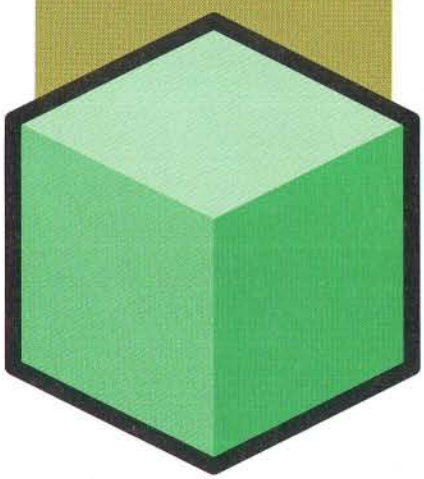
Beats Tech Support

"Brussels police department, how may I assist you?"

"Uh, yes. I just got hit in the face with a cream pie."

"Okay, sir. Have you called the Brussels

NOW YOU CAN CODE



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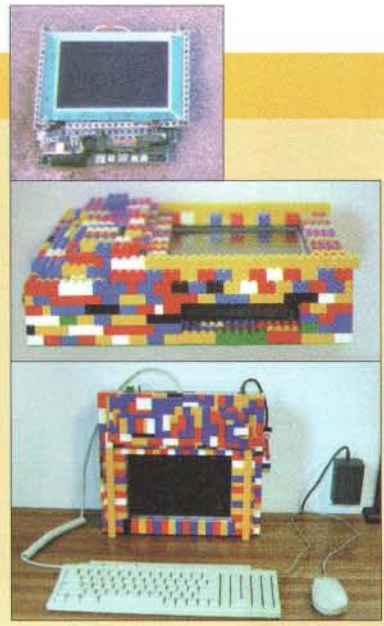

Tom Owad recently posted pictures of his Lego Macintosh, inspired by the Outbound Laptop (a really old portable Mac), on his Web site. It drew immediate oohs and aahs from us, what with our fascination with both Macs and Legos. Tom took a PowerBook 160, modified its mountings, and built a Lego shell around the critter. The top picture shows the exposed PowerBook 160; the middle shows the floppy drive; and the bottom shows how the whole thing sits on a desk. The little green block on the top is the power switch, and the black pole is the reset button. Check out http://www.home.earthlink.net/~tomowad/macprojects.html.

police department before?"

"No."

"Well, let me get a little information about you for our records. Your name?"

"Bill Gates."

"Country?"

"United States."

"Native language?"

"English."

"OK, sir. Your police department case ID number is BP3141592954374355484 75-X757645. Please use this number the next time you call. Now, you say you were hit in the face with a pie?"

"Yes, I was just about to meet with the Belgian prime minister. One person distracted me while another hit me with a cream pie."

"We've had other people report they were hit in the face with a custard pie. Are you sure it was a cream pie?"

"Well, I have white stuff all over my face and I don't see any custard, so I really don't think it was a custard pie."

"Have you visited the prime minister before?"

"Yes."

"Were you hit in the face with a pie then?"

"No."

"Hmm. Have you visited any other prime ministers in the past?"

"Yes."

"Any pies then?"

"No."

"OK, well, let's try something. Go outside the building and come in again. I'll wait."

"Just a minute."

Several minutes pass.

"Okay, I'm back."

"Did you get hit by another pie?"

"Of course not."

"Well sir, I don't know what could have caused the first pie, but it looks as if things are working fine now. I'll make a note of the problem, though. If it happens again, please note the exact details of the situation and call us again. Thank you for calling the Brussels Police Department." Click.—Paul Moortgat

We'd Hate to Ask

What does Reverend Jerry Falwell think of the purple iMac?—Adam Kincher

What Color Are They?

With the recent flurry of readers demanding less entertaining letters in *MacAddict*, I feel I must quickly submit my own frivolous missive before the cold hand of rationality forever turns the *Letters* pages into a ponderous forum for the discussion of disk formatting and extension conflict resolution. So here it is: I'm not wearing trousers. Okay, I am wearing trousers. But they are very racy.—Ken Radliff

Did You Try Rogaine?

I have a simple solution for those who are trying to get used to the new round mouse introduced with the iMac. From what I have read, the problem is that people can't tell up from down.

I solved the problem by sticking a small chair-leg cushion (the kind used to protect hardwood floors from scratches) to the top of my mouse. Hardware stores sell all sorts of glass and hardwood floor protectors. My first thought was to make two eyes on the top of my round mouse

with them. I couldn't find any in my hardware drawer, so I went for the fuzzy leg protector, which I have come to think of as a hairpiece for my round mouse. I like my round mouse more now, even if it has to sport a rug.—Dennis N. Perry

And Now, the Obligatory Serious Stuff

I just flipped through your April edition and stopped at the list of best and worst Macs ever made. Ouch. You guys must be infected with the Scores virus. Your "Best" list was lamer than a 286. The Mac II—the machine that established the Mac as a truly viable desktop publishing platform—only ninth on your list?

Don't you remember how the Mac II left us scrambling for the chance to pay $1,000 a megabyte for RAM? Sure, the PowerPC Macs were faster, but none had the revolutionary impact of the Mac II. And how could you forget the groundbreaking Mac IIci? My company bought two in 1989 and used them to run FileMaker, 4D, and QuarkXPress until last summer. Nine years from a CPU? That's like driving a car for 100 years.—Bruce Taylor

In the March issue of *MacAddict* (p58), you reviewed Anarchie Pro 3.0 against Transit 1.1.1. Er, Anarchie Pro 3.5 has been out since mid-December. Why didn't you use this version? Granted, I know you guys have deadlines, but I think it is unfair to Stairways Software to review version 3.0. Version 3.5 kicks major ass!—Gordon Hawley

At the time we assigned the review, Anarchie Pro 3.0 was the newest version available. During our lead time, sometimes the developer releases patches or a new version of the application. Many times the new release occurs a few days after the reviewer has finished the evaluation or after the review has gone to press. We'll probably look at version 3.5 in the near future. Remember—developers do get several chances to show us their stuff; the timing is just tough sometimes.—JH

The First Mac Addict Writes

Because I was the very first Mac addict in the world, and because I like just about everything in your magazine—from its attitude to letting me in on Mac secrets even I don't know—I've been thinking of writing to you for a while (heck, I've been thinking about writing for you for a while).

The other day, I read Mark Simmons's "Macintosh Urban Legends" (Mar/99, p36), which claims to give a bogus history and then dig out the real dirt. Someone's gotta sharpen their shovel.

All right! My name is spelled correctly! But then the first sentence goes astray: "Jef Raskin, a veteran of Xerox's Palo Alto Research Center..." Fact: I never worked at PARC. Not even for one day. I did visit there a bunch of times, but that hardly makes me a veteran.

I did not favor a text-based machine, as Simmons says. No way. I wanted the Mac to do music notation, drawing, photorealistic graphics, weird fonts, games, all that good stuff. In fact, the original Lisa project was a text-based (character generator) machine, and I convinced the Lisa team to go to a bitmapped screen as I had specified for the Mac! History's gotten flipped on this one.

Fact: I did want to operate it without having to take my hands off the keyboard (except for graphic input). Yeah, I didn't want a mouse, but I did want a trackball, because it's so hard to run a mouse over all those Oreo crumbs that are the mark of the true professional programmer.

The Mac did change a lot, even while I was running the project, because a lot of great people with good ideas worked on it, but it sure wasn't "utterly different" from what I wanted. What I take credit for was creating a computer that was designed from the get-go as hardware and software to support a good interface—not a random interface pasted on some second-rate hardware (you know what I'm talking about here). My basic concept never, never, never changed.

Which is why we're addicts and not mere users.—Jef Raskin

As Jef is the foremost expert on his own career and interface design concepts, his account may be regarded as definitive. Mark apologizes for the errors and has been sent to bed without any supper.

MAC ---------- WINDOWS

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Adobe's Big Day Out!

Graphics giant parades its spring product line

Loaded with another round of amazing trinkets for members of the press, Adobe Systems recently held a typically raucous press engagement and proved it hasn't been sitting around waiting for Quark to raise its buyout offer. Amid phrases like "easily repurpose and mine digital content assets for Web and print" (yikes), Adobe showed off two brand-spanking-new Mac products: InDesign (the company's next-generation page-layout program) and PressReady (a proofing tool for color inkjet printers). Adobe also trotted out new versions of two popular Mac standbys: GoLive 4.0 (formerly known as GoLive CyberStudio 4.0, which Adobe recently purchased) and Acrobat 4.0. Here's our exclusive (except for all the other press people who were there) first look at these new toys.

InDesign—Formerly known as K2 (the project's code name), InDesign is Adobe's new, built-from-the-ground-up page-layout application. Although it serves the same basic function as PageMaker, InDesign is not just another version of the venerable pasteup veteran. For starters, InDesign sports—and relies heavily upon—an extensive plug-in architecture. The core app is only a couple of megabytes, and plug-ins serve even some of its higher functions. Adobe hopes that with this plug-in structure open to the public, InDesign will be enormously flexible and expandable. InDesign also features a huge zoom range, from 5 to 4,000 percent; unlimited undos; fantastic typography tools; page sizes ranging from 1/6 inch by 1/6 inch to 18 feet by 18 feet; and limited QuarkXPress compatibility, including an XPress keyboard shortcut set and the ability to import XPress documents with reasonable accuracy.

InDesign will have meaty but not unreasonable hardware requirements. Although Adobe says the application will run on a 603e-based Mac with Mac OS 8.5 and 32MB of RAM available to the program, it recommends a G3-based Mac with 48MB of free RAM.

PressReady 1.0—The second new Adobe product to arrive this summer, PressReady is a host-based RIP (raster image processor) for color inkjet printers, meaning it takes PostScript and translates it into a format most low-end color inkjets can digest. Folks who do lots of color PostScript proofs but can't afford an expensive color laser printer will be happy to have this product, as it allows them to send their files to a Canon, Epson, or HP inkjet printer—all three companies have backed the product.

GoLive 4.0—Adobe recently purchased the popular high-end Web site creation application GoLive CyberStudio and wasted no time in pushing out version 4.0. It also renamed the product Adobe GoLive 4.0. Some of the application's new features include an amazing QuickTime movie editor, XML (Extensible Markup Language) and ASP (Active Server Pages) support, PDF integration, new CyberObjects and JavaScript capabilities, and a new table editor. Adobe also improved the application's user interface, site view mode, and handling of Cascading Style Sheets and DHTML.

Adobe Clown 4.0—The latest version of Adobe Acrobat has some spiffy new features, including the ability to compare versions of a document to see what's been changed, embed digital signatures in documents, and capture whole Web sites as PDF documents. Unfortunately, as of this writing, those features are only available in the Windows version of Acrobat. So from now on—in what we feel is an appropriate response to Adobe's continuing to thumb its nose at its bread-and-butter Mac market—anytime we refer to Adobe Acrobat in our *Get Info* section, we will call it Adobe Clown. Should the company make the application truly cross-platform again, we'll go back to calling it Acrobat. That said, there are a few new features in Adobe Clown for the Mac, including saved distiller settings, a wider selection of page sizes, support for PostScript 3, and user interface enhancements.—*DR*

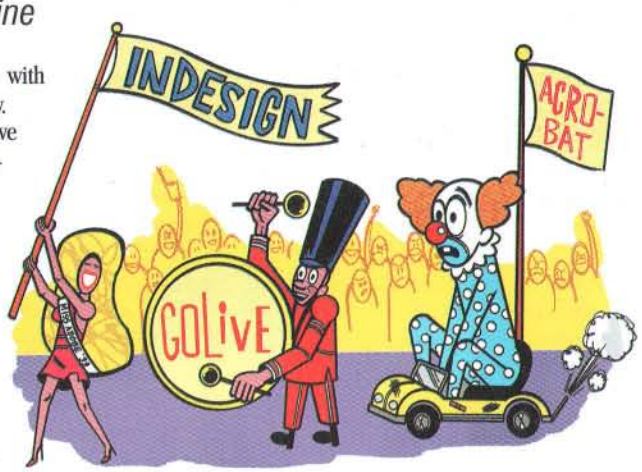
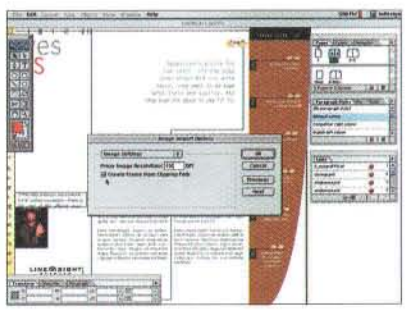


Illustration by Mike Gorman



ADOBE'S NEW PAGE LAYOUT APP, InDesign, sports a familiar Photoshop-like interface.

SCHEDULED AVAILABILITY

InDesign 1.0
Early summer
$699 street price

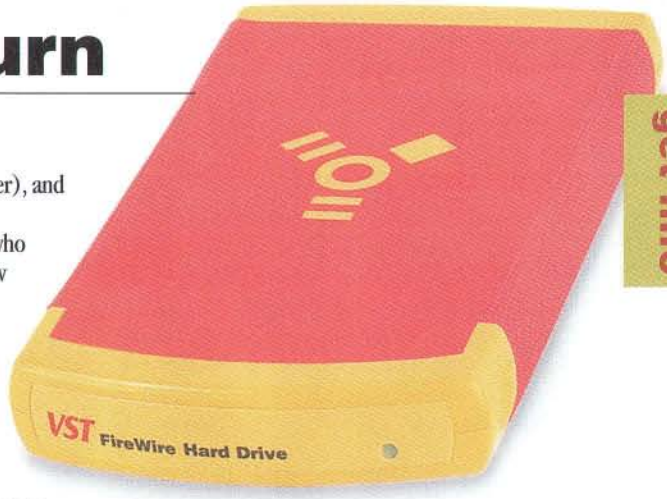
PressReady 1.0
Early summer
$149 street price

GoLive 4.0
March
$299 street price
$99 upgrade

Acrobat 4.0
March
$249 street price
$99 upgrade

FireWire's Slow Burn

Bus chugs toward new markets



Developers making peripherals that support Apple's newest port, FireWire, will soon release the first consumer devices for the new blue-and-white G3 tower. Despite last month's grumbling about licensing fees, FireWire-armed hard drives, removable media drives, and CD-RWs will likely hit the shelves as you read this. And thanks to a recently announced agreement, FireWire should finally explode into the computer world as we hoped it would years ago.

The agreement, a patent pool jointly announced by Apple, Compaq, Matsushita (Panasonic), Philips, Sony, and Toshiba, enables developers who want to put FireWire ports on a device—a computer, hard drive, or PCI card—to license the necessary patents more easily. Just before this announcement, Apple was taking flak for charging vendors too much to license FireWire (which Apple invented). While nobody has said what the new charge will be or how much Apple will get for licensing FireWire, the complaints about fees seem to have subsided. We hope this starts a new trend that makes acquiring FireWire cheap and easy, and turns it into the new rage for scanners, printers, PCs (shudder), and hard drives in the next year.

Up to now, the only people who could take advantage of the new G3's cutting-edge port prowess were digital video and high-end digital camera users. But soon—thanks to LaCie, VST, and Castlewood Systems—anyone looking to add a hard drive or CD-RW will be able to use the speedy new bus. Here's a rundown of what we expect to see.

LaCie is so fired up that it announced three different drives for the new bus—a CD-RW, a normal hard drive, and a DVD-RAM drive. At press time, we couldn't dig up the specs for these devices, but the company was planning for a March release. Stay tuned at http://www.lacie.com, or call 503-844-4500.

VST Technologies may be the most celebrated FireWire hard drive maker, because Steve Jobs showed off its tiny, hot-swappable, bright orange drive at January's Macworld expo. These colorful buggers, which don't require an extra power source, are expected to show up in April; 2GB, 4GB, or 6GB versions will go for $299.95, $399.95, and $499.95, respectively. Visit http://www.vsttech.com or dial 978-635-8282 for more info.

Castlewood Systems' impressive Orb removable media drive has been on the top of our vaporware list for over a year, but the company is promising to ship a FireWire version of the drive in the second quarter of this year. The elusive drive will take 2.2GB disks costing $29 each, and will set buyers back (assuming they can find one) $199.95. For more info, head to http//:www.castlewood.com or dial 925-461-5500.—*RC*

Who's Suing Whom, and Why

Since high-tech lawsuits tend to begin in a blaze of publicity, then subside into years of tedious courtroom maneuvers, it's helpful to step back every now and then to take a big-picture view of who's suing whom.—*MS*

Imatec versus Apple

Medical imaging company Imatec seeks a $1.1 billion settlement from Apple, alleging that its ColorSync technology infringes on Imatec's color-matching patents. Apple claims that prior art invalidates the claims. The trial date is still months away.

Exponential versus Apple

This defunct maker of the PowerPC-compatible X704 processor says Apple double-crossed it, and seeks $500 million in payback. Apple has countersued to block the sale of Exponential patents to graphics chip maker S3. Stay tuned for the continuing drama.

FTC versus Apple

The Federal Trade Commission has forced Apple to honor its promise of free tech support for folks who bought Macs between September 1992 and April 1996. Those customers whom Apple improperly billed will get a refund notice.

Eolas Technologies versus Microsoft

Stop the patent office, I want to get off! Teensy R&D firm Eolas Technologies claims ownership of the browser plug-in/applet concept and sues Microsoft because that's where the money is. Perhaps this serves Microsoft right for taking out a patent on Web style sheets.

Sony versus Connectix

The PlayStation maker seeks to block the sale of Connectix's Virtual Game Station on the grounds that it undermines copyright protection and makes PlayStation games look bad. A court rejected the restraining order, Connectix shipped the Virtual Game Station, and we'll see you in court.

FTC versus Intel

The Federal Trade Commission takes aim at the Pentium powerhouse, alleging that Intel strong-armed PC vendors into giving up their patents. The FTC hearings, which began in March, will probably go on forever.

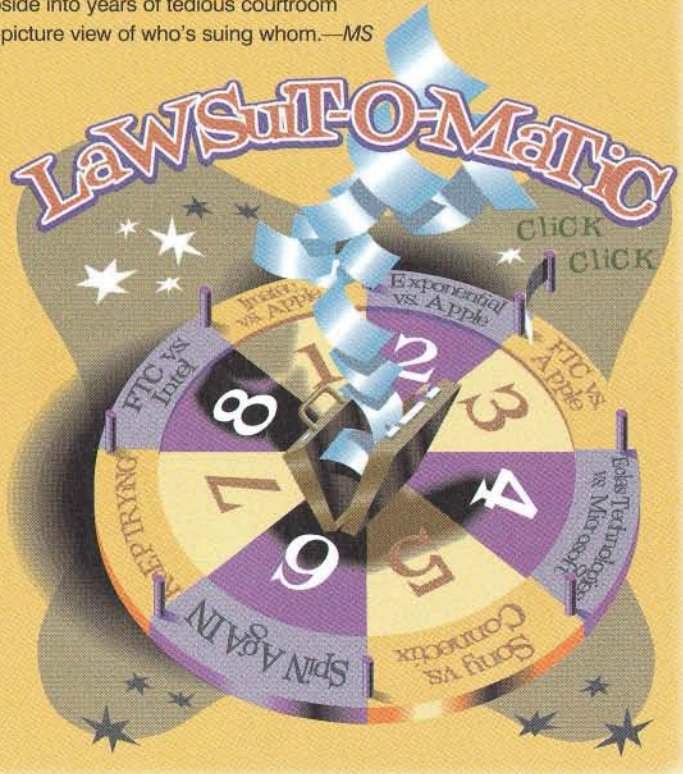


Illustration by Marty Baumann

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3D Storm's A-Comin'

Professional Mac 3D's new wave crashes in

The voracious appetite for ever-faster 3D is driving Apple's imaging technology like never before. The official buzz has focused on how OpenGL will bring 3D games like Quake III to the Mac, but the world of 3D productivity is also getting ready to party in 1999 with upcoming FPU-accelerated G4s and the expected entry of some serious new players. You might not be able to tell it from the calm surface of the Mac 3D scene, but the wave is definitely coming.

NewTek's LightWave 3D 5.6 ($1,995, 800-368-5441, http://www.newtek.com) has been resting sleepily on its laurels for the last year, leaving the high end of the Mac 3D market defenseless against rival company Play (888-888-7529, http://www.play.com). Play bought Electric Image last year and expects version 2.9 (around $2,300—down from $7,500—with a top-notch modeler finally included) will not merely recover from its near-death experience, but will eat LightWave for lunch.

The high-end world will turn upside down when Avid Technology's Softimage (800-576-3846, http://www.softimage.com) and SGI's Maya (416-362-9181, http://www.aw.sgi.com) are announced for the Mac later this year. These pro-level apps have capabilities Mac animators can only drool over now, and Avid recently dropped the price of Softimage within $2,000 of Electric Image's. Impatient folks can get that high-end feeling from Mac-native Pixels:3D 3.0 ($999, 619-220-4902, http://www.pixels.net), a little-known Softimage look-alike with a bristling feature set.

YOU CAN SQUISH MODELS LIKE CLAY and paint on them like Picasso with Play's Amorphium.

Hedging its bets, Play will introduce the suspiciously Bryce-like Amorphium ($199). This combo modeling and 3D-painting app, with its unique ability to mold polygons like Silly Putty and paint on them like Easter eggs, challenges MetaCreations' lock on quirky low-end 3D tools (as well as wacky screen widgets).—*Steven Anzovin*

3D Crystal Ball 2000

Illustration by Chris Vanderhoof

The prediction biz is pretty risky, but what the heck—somebody's got to do it, especially at the dawn of the new millennium. Here's what we think the next year will bring to 3D.

- The OpenGL juggernaut will crush all other 3D APIs on the Mac and in the Wintel world as well. Hapless Glide will slide into obscurity and Direct3D will retire to that special oblivion reserved for failed Microsoft "standards."
- In the wake of its well-publicized OpenGL deal with Apple, SGI will develop a high-end, multiprocessor graphics accelerator and rendering engine for the Mac—possibly as an Apple-branded personality card for next-generation G4 machines.
- Contrary to rumor, Kinetix (http://www.kinetix.com) will not bring PC market leader 3D Studio Max to the Mac any time before Y3K. Kinetix's parent, Autodesk (http://www.autodesk.com), hasn't forgotten that AutoCAD for Macintosh tanked a few years back.

Troubleshooting tricky modem connections

MAKE SURE YOUR MODEM'S NAME shows up here, or you might be using the wrong modem script.

- If a disconnect always occurs after a specific time interval with no network activity—say, 10 minutes—then your PPP connection software may be set to boot inactive connections, or your ISP may have a policy of booting inactive connections. The fix? Either adjust the idle timeout in your PPP software, or stay active. (You can do the latter by letting your machine sit on a page with rotating banner ads, such as http://www.macaddict.com. The banners register as fresh page loads.)
- If you encounter strange problems such as intermittent connections or not getting the proper speed, you may be using the wrong modem script. Open the Modem control panel and make sure your modem is selected in the Modem pop-up menu in the Setup box. If it's not selected, download the proper modem script from your modem manufacturer's Web site and drop it in the Modem Scripts folder inside the Extensions folder.
- If your modem drops a connection when someone calls, and you have Call Waiting on your line, you need to disable that feature. To do so, enter *70 (followed by two commas) before the number in the telephone number field of your PPP software.—*DR*

All information comes from Apple's Tech Info Library at http://til.info.apple.com. Browse there and learn something new today!

Think Gig.

Asanté Introduces Gigabit Networking for the Macintosh.

Apple is leading the digital revolution with its new Power Macintosh G3. Asanté is making sure all of your existing machines can keep up.

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scrapbook

What the heck are you looking at this sentence for? Just read the friggin' article.

Ready...Set...Logo!

by Mark Simmons

Product lines and software strategies may come and go, but the Apple logo is eternal. It may have lost its rainbow colors of late, but this corporate icon ranks with the Nike swoosh and the AT&T death star as one of the most distinctive and recognizable symbols in the business world. Join us as we dig into the mysterious core of the bitten fruit.—*MS*

The Path Not Taken

This familiar fruity silhouette isn't Apple's first logo. The original one, designed by forgotten Apple cofounder Ron Wayne, was soon replaced by the work of an art director at the Regis McKenna public relations agency. The latter logo is the one we know and love today. Curiosity seekers can ogle Apple's original logo in Owen W. Linzmayer's *Mac Bathroom Reader* (for more information, visit http://pw1.netcom.com/~owenink/bathroom.html).

Taste the Rainbow

For its first two decades, the Apple logo bore six horizontal rainbow stripes. According to Apple's logo guidelines, the symbol had to be displayed in its authentic hues. The Mac's 16-color system palette accordingly included these colors to ensure correct coloration of the Apple menu icon. In four-color and gray-scale modes, the logo simply appears as a black silhouette.

Dangerous Curves

A sound byte from Michael Learmonth's article "The Cuddletech Revolution," archived at http://www.metroactive.com: According to Milton Glaser, designer of the famous and oft-imitated "I Love NY" logo, the recent design trend toward soft, rounded shapes "comes from a lack of motherly affection. There is some recall of the mother's breast, a maternal memory." Hmm...

Lost in Space

Apple has pretty strict guidelines about the use of its logo. According to the 1993 edition of these guidelines, the logo must not be shrunk to less than 7mm in height, and an amount of white space equal to the height of the apple proper (sans jaunty leaf) should surround it on all sides. Penalties for white-space transgression, while unspecified, are presumably severe.

Brand Awareness

Read the fine print: The Apple logo is a registered trademark of Apple Computer, Inc. As such, it has a lot of company; Apple's eclectic trademark list includes more than 200 slogans ("All great software wears this face," "Power Beyond Speed"), gimmicks ("BookCover," "PrizeFest"), and cutesy product names ("DoubleVision," "PlainTalk"). You can find the complete list at http://www.apple.com/legal/publictmlist.html.

An Apple for All Seasons

Now that Apple's new leadership has decreed the rainbow logo passé, the single-hued silhouette can get all sorts of exciting color and texture treatments. Recent examples include the crystalline version on the PowerBook G3 Series case, the iMac's translucent candy-colored rendition, and the HAL's-eye-red one used in Apple's Y2K ad campaign.

This End Up?

The Apple logo on the top casing of the PowerBook G3 Series appears upside down during normal use. Apple's Tech Info Library explains that feedback from product testing led the design team to invert the logo. Why? When the case is closed, the logo helps orient users so that they can figure out where the latch mechanism is hidden.

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Introducing the New MACh Speed G3™ Performance Package From XLR8.

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WITHOUT G3

3 *hours - from art to final (hurry up and wait).*

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call 888-XLR8TOR today!

or get all the details and register at www.xlr8.com/g3

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bluff

THE MACINTOSH BLUFFER'S HANDBOOK

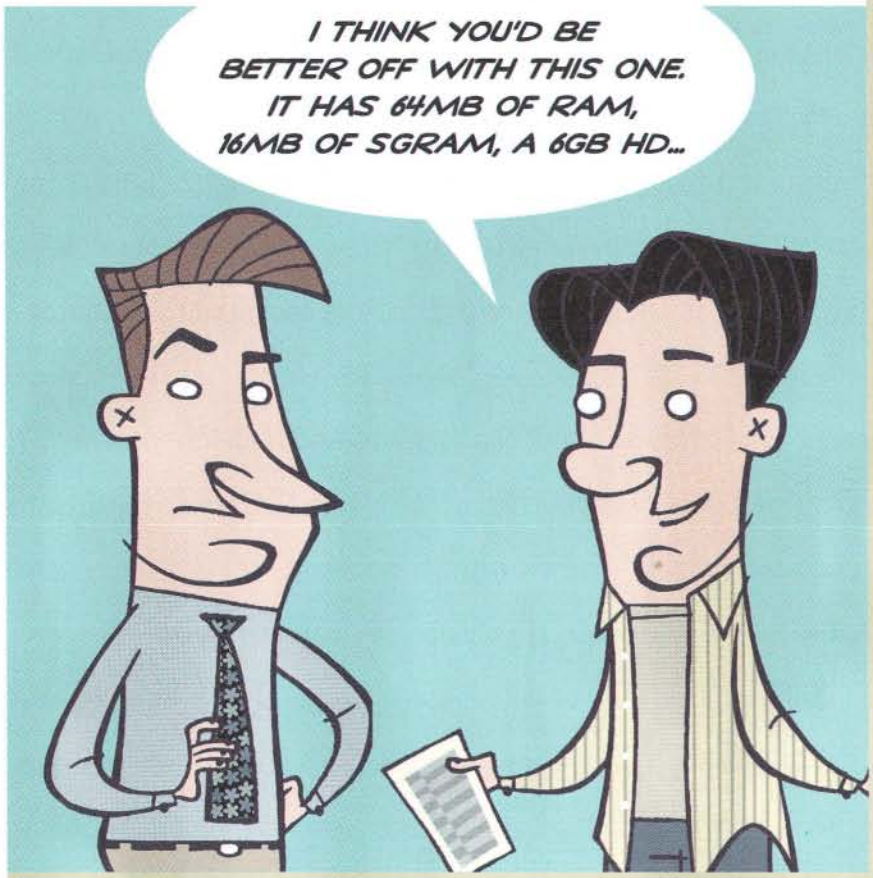
So you're not a Mac genius.
They don't have to know that.
Study your handbook and they never will.

BY MARK SIMMONS ILLUSTRATIONS BY TERRY COLON

They're all around you, gabbing about gigabit Ethernet and shooting the breeze about their SGRAM upgrades. They're the Mac elite, the upper echelons of computer culture. But their expert poses and technobabble hide a dirty secret: More often than not they're faking it, leveraging a little knowledge to inspire fear and awe in their naive associates. Now we're going to even the score and expose the secrets of this fraternity of fakers so that you can infiltrate their ranks, issue acronym-laden pronouncements, and befuddle fellow Mac users by blathering about file formats and transfer speeds.

What's that? You don't think you're ready to pass yourself off as a top-tier Mac savant? Ah, but that's the beauty of our "Bluffer's Handbook." Armed with these few pages of scanty generalizations, you'll be able to talk the talk even if you can't walk the walk. You may not learn how to set up an ISDN connection, but you'll be able to sneer convincingly that it can't hold a candle to the bandwidth bounty of a DSL hookup. And after you study this guide, you'll even be prepared to out-banter the jargon-crazy Wintel geeks and win those tedious cross-platform debates. Remember this: Chances are, they're all bluffing too!

ATTACK WITH ACRONYMS



Your first lesson in fakery is in mastering that reliable standby of technology jargon: the acronym. Jargon of any kind is daunting to the uninitiated, but there's nothing quite as obtuse as a string of meaningless alphanumerics. The term "hard disk" at least implies something tangible and solid, but "ATM" can—and does—stand for anything from "automatic teller machine" to "asynchronous transfer mode." Such multipurpose terms make it impossible for the inexperienced listener to guess what you're talking about, so sprinkling your conversation with gratuitous TLAs (three-letter acronyms) is guaranteed to impress novice computer users.

You don't actually need to know what these acronyms mean, let alone what the letters stand for, to use them effectively. Realizing this, the companies that foist these terms upon us will often opt for sequences that are either cutesy (Small Computer Systems Interface doesn't mean anything, but it's fun to pronounce "SCSI" so that it sounds like "scuzzy") or downright silly (TWAIN, the scanner interface standard, stands for "Technology Without an Interesting Name"). If you ever plan to get anywhere with your career as a con artist, you shouldn't waste any brain cells retaining this nonsense.

A TLA for Every Occasion

While you needn't keep track of the meaning of every acronym, the practicing bluffer should try to use each one in the proper context—after all, there's nothing more embarrassing than being caught demanding an extra megabyte of double-density IMAP. Thus, we've prepared a quick intro to acronym usage. If you *really* want to know what these terms mean, you can look 'em up at http://www.whatis.com; if a listener requests an explanation, just tell 'em to look for a FAQ...or simply RTFM.

System Architecture Macs used to be based on Motorola's 680X0 processors; now we have the PowerPC family, whose ranks include the PowerPC 601, 603, 603e, 604, 604e, and 750 (popularly known as the G3). Processors, or CPUs, can contain elements such as ALUs and FPUs, should be bolstered by a hefty quantity of L2 cache, and preferably will slot into a ZIF socket.

Memory RAM, DRAM, SRAM, and/or SDRAM are where your Mac keeps the system software, applications, and miscellaneous data it's currently working with; this memory is usually made up of several SIMMs or DIMMs. VRAM and SGRAM are devoted specifically to graphics, and then there's ROM and PRAM, which are used for weird little specialty tasks.

Storage Hard disks and other storage devices are typically attached to a SCSI or ATA bus. ATA is a gold mine of TLA mumbo jumbo, with varieties that include IDE, EIDE, Ultra ATA, and ATAPI—many of which are synonymous. The new kids on the block are USB, which can support low-performance gadgets, and the high-performance FireWire, which sounds *much* cooler when you call it IEEE 1394. If you're really with it, you'll trade in your 24X CD-ROM for a CD-RW, DVD-ROM, or DVD-RAM drive.

Say What?

1. Most three-letter acronyms are read by spelling out each letter ("tee-el-ay"). This also applies to three-letter formations that start with a vowel, such as ATA ("ay-tee-ay"), IDE ("eye-dee-ee"), and USB ("you-ess-bee").

2. However, TLAs with a vowel in the middle, such as RAM, LAN, and POP, are usually read as words.

3. Four- and five-letter terms are generally pronounced like actual words. For longer acronyms that can't be read as words, a hybrid approach is permitted—witness LDAP ("el-dap") and SGRAM ("es-gee-ram").

4. Memorize the tricky ones. These include FAQ ("fack"), CISC ("sisk"), ASIC ("ay-sick"), GUI ("gooey"), ASCII ("ass-key"), and WYSIWYG ("whizzy-wig"). As for URL and GIF...well, that's entirely up to you.

FIND THE FLAWS

Having built up your vocabulary of daunting acronyms, you should be able to convince novice Mac users that you're some kind of expert. However, mere jargon won't impress your fellow bluffers. To establish your superiority over the other fakers, you'll need to move on to the classic one-upmanship technique of gratuitous nitpicking. Once you've rapped their knuckles for some trivial technical error, they'll soon learn who's the technological top dog.

The trick with this gambit is that you actually need to have some knowledge of the subject matter. For example, whereas our previous exercise required only that you be able to insert the acronym "IDE" into an innocent discussion about hard disk storage, to use this more advanced technique you'll also have to know that the term is a legacy of less enlightened times and that the peripheral interface should more properly be referred to as "ATA."

Test Your Nitpicking Skills

Even the most innocent techie discussion can provide opportunities for you to point out piddling errors and assert your dominance over your fellow bluffers. Hone your skills by spotting the obscure mistakes in these sentences.

1. "System 7 is so passé; you need to upgrade to at least System 8."

2. "If you upgrade your VRAM, you'll go from 16- to 24-bit color."

3. "Dude, where have you been? MPEG-3 is the hottest thing in electronic music distribution!"

4. "Yeah, JPEG is a great format for Web graphics."

5. "If you install a G3 upgrade card, you should probably disable your Mac's level 2 cache."

ANSWERS

1. That should read *Mac OS* 8, not System 8. Starting with version 7.6, Apple's Macintosh system software has been given an official name. Versions prior to this bear the name "System"—for example, System 6.0.7, System 7.5.5—while subsequent ones carry the moniker "Mac OS."

2. The Mac's two highest color modes, which Apple describes as "thousands" and "millions" of colors, use 16 and 32 bits of data respectively to describe each pixel. Of these, 15 and 24 bits respectively are actually devoted to conveying color information, with the remaining bits reserved for alpha channels that can be used for masking, transparency, layers, or collecting dryer lint. So technically, 32-bit color is really only 24 bits of color with 8 additional bits reserved for other graphics tasks. Now *that's* being picky!

3. The MP3 digital music format is hot, hot, hot—but it's also misnamed, misnamed, misnamed. The catchy moniker is shorthand for MPEG-1 Audio Layer III, a spinoff of the Moving Picture Expert Group's family of video and audio file formats. Other MPEG standards include MPEG-2 and MPEG-4, but the real MPEG-3 is a stillborn standard whose identity the upstart MP3 has subsumed.

4. Not so! All raster (pixel-based) file formats are inherently flawed, since they either preserve all the image data and consequently result in bloated files, or—like JPEG—sacrifice image data to compress it more effectively. The true computing savant will reject both trade-offs, dreaming wistfully of the day when the whole world embraces the crisp purity of vector graphics.

5. The PowerPC G3 processor is equipped with its own speedy backside cache, which constitutes the second level of temporary data storage. If you install a G3 upgrade in an older Power Mac, its level 2 cache thus gets bumped to level 3. You should probably remove or disable it in the interests of performance, though.

DAZZLE 'EM WITH DATA

Now that you've convinced your colleagues you're a bona fide Mac guru, get ready for the computer geek's version of frivolous chit-chat—the never-ending exchange of facts, figures, and statistics. It's all about who got the most gigs for the dollar and the most MIPs per megabuck. If need be, you can jot down nifty factoids and benchmark numbers whenever you see them, and then try to work them into casual conversation: "So, Dave, I see that this new hard drive array contains six 10,000-rpm disks with a total capacity of over 200GB!"

If you're not inclined to take notes on every snippet of data you come across, there's a simple shortcut. In most cases, the technological competition comes down to one simple consideration: bandwidth. You can have your hot-swappability, your plug and play, your isochronous modes, and your cable lengths, but all that stuff is so difficult to understand that even hardware fetishists have a hard time keeping track of it. No, what it all comes down to is this: The bigger the pipe, the better the bus.

Numb and Number

For those whose eyes glazed over during dreary algebra lessons, the mathematics involved in geek chat may be one of the biggest obstacles to mastering the bluff. If you need remedial instruction, take a crack at these refresher exercises.

1. If there are eight bits to the byte, and a FireWire bus transmits at 50 MBps, how many times faster is it than 100Mb Ethernet?

2. If Terry is using an ISDN connection to download a 400K Fast Start QuickTime movie whose playing time is 23 seconds, will it start playing immediately or will she have to wait?

3. If a device driver named Zoë has 128 bits of data, and it's driving a 50MHz bus that's only 32 bits wide, how long would it take the driver to send all the bits on their way?

4. If every bit of color data doubles the number of colors your Mac can display (with one bit giving you two colors), then wouldn't a scanner's 30-bit color mode give you a whole lot of colors?

5. If Brad has eight RAM slots that have to be filled in pairs, and he can't leave the 4MB chips alone with the 32MB chips while he's crossing the river...oh wait, we're thinking of something else.

ANSWERS

1. Four times. 50MB equals 400Mb.

2. She'll have to wait two seconds. 400K is 3,200Kb; divide by 128 Kbps, and you get a 25-second download time. Darn, time to get a cable modem!

3. It would take 80 nanoseconds. The bus shifts 32 bits 50 million times a second, so it takes four 50-millionths of a second to move all 128 bits.

4. Yes, it sure would—1,073,741,824 of them, to be precise.

5. The answer is 384MB, but you're telling it all wrong.

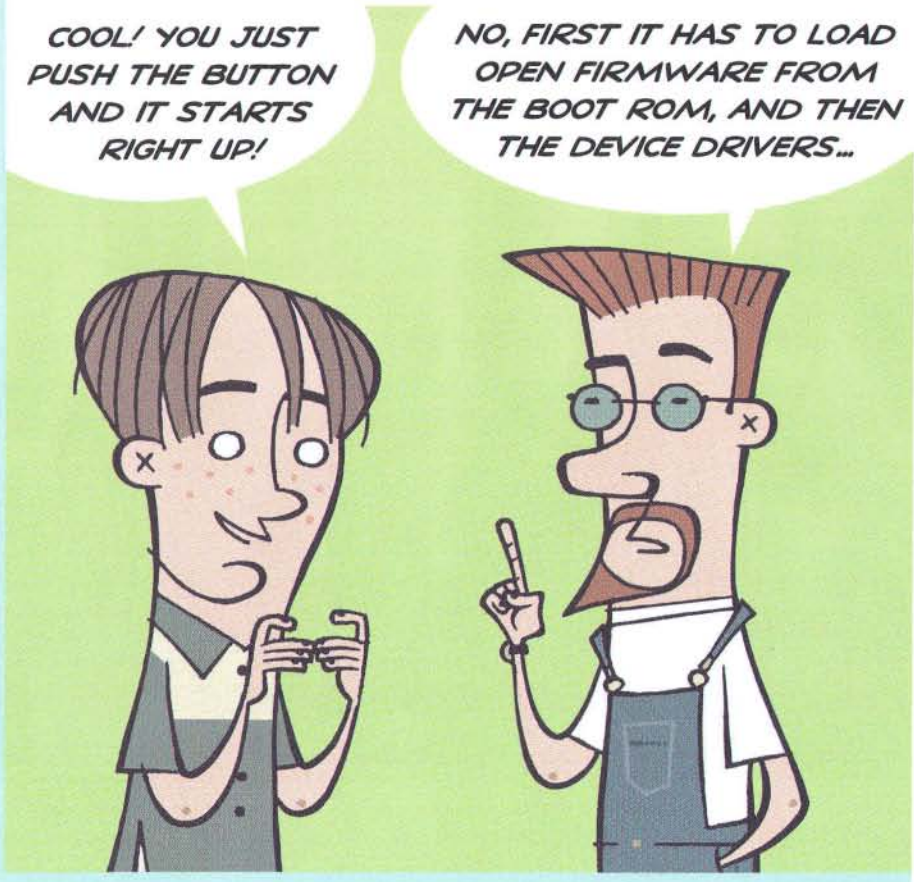
Magic Bus

In computer lingo, a bus is a hardware interface that connects multiple devices. Examples include SCSI, USB, and ADB. Interfaces that support only one peripheral, such as serial ports or headphone jacks, don't qualify as buses. But the term serves as useful shorthand for ports and pipes of any kind; "interface" just has too many syllables. Buses also are useful as scapegoats for a computer's shortcomings, since at one point or another in the data-manipulation process you'll always end up squeezing bits through some connection that's just too darn slow.

THINK DIFFICULT

Now that you've mastered the disciplines of acronymic jargon, technical nitpicking, and numerical banter, it's time to complete your impersonation by mimicking the geeky mannerisms of the genuine expert. Don't worry, we're not going to make you guzzle Mountain Dew and hoard volumes of *Inside Macintosh*. The trick here is to embrace senseless complication—seeking out multistep keyboard command sequences to do the work of a single mouse click and mystifying lesser Mac users with complex "explanations" that serve only to confuse and bewilder.

If you play this gambit right, you'll come off looking like a well-intentioned guru whose helpful advice and abundant knowledge have the unfortunate side effect of intimidating the recipient. But if you must use this tactic on defenseless civilians rather than journeyman bluffers, be careful to do it responsibly. For example, use it to steer a first-time computer buyer away from the traumatic Windows platform, with its WIN.INI files and Registry editing, toward the friendly simplicity of a shiny new iMac.



Act Geek

When called upon to demonstrate something on your Mac, try to use as many obscure Command-key shortcuts as possible. If you select text in a word processor and then choose Bold from a Font menu or click a toolbar icon, there's a danger that onlookers might actually learn how to perform this task themselves. But if you use the Command, Shift, and B keys together, they'll never know what happened.

Magic Word: API

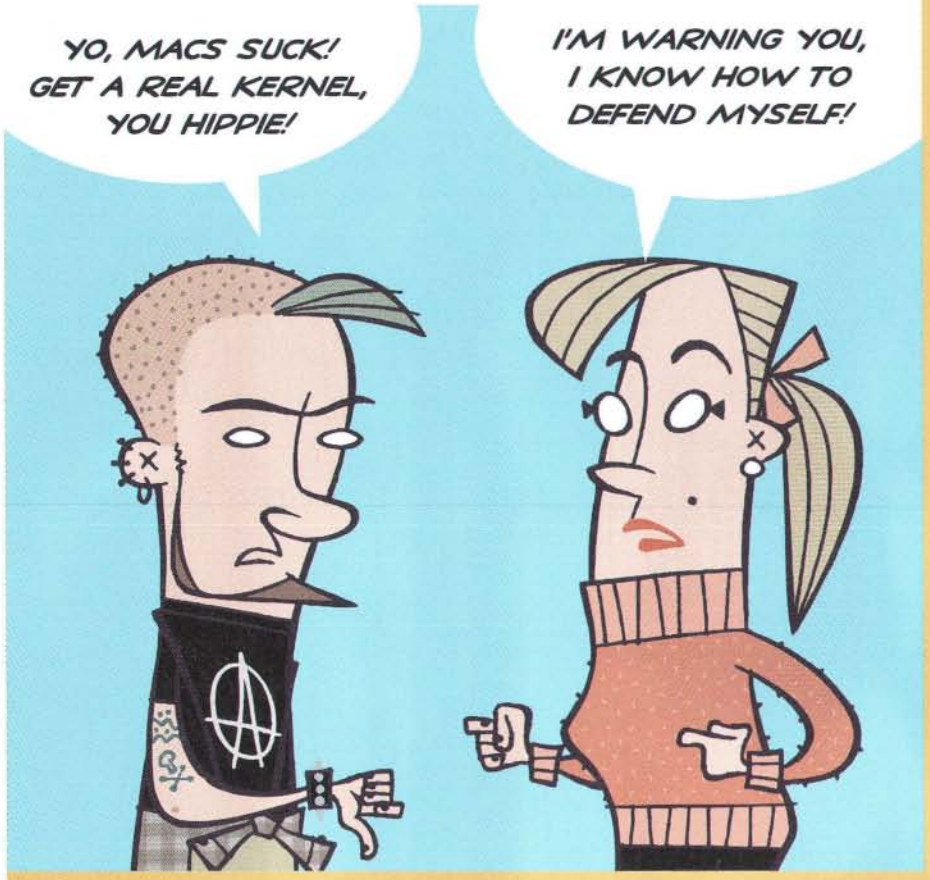
Looking to spice up your dialogue? Try API, the Hamburger Helper of jargon! Any system-software feature or application that communicates with plug-ins or other programs does so via an Application Programming Interface. This lends itself to linguistic padding: It's much more impressive to say a program uses Apple's QuickTime APIs than simply to say it uses QuickTime.

Speak Geek

If you really want to impress your fellows with your wisdom, show it off at every occasion by turning simple statements into elaborate minilectures. Where you have some applicable technical knowledge—such as a working understanding of the many steps involved in the Mac's startup process—you can insert it into the conversation on some flimsy pretext. Otherwise, mere long-windedness will suffice.

DON'T JUST SAY...	WHEN YOU CAN SAY...
"Double-click the icon with your mouse."	"Launch the application from the Finder using the Command-O or Command–down arrow keyboard shortcuts, or if you insist, using an ADB or USB input device."
"The more memory you have, the better."	"If you upgrade your RAM, you'll be able to give your applications larger memory allocations and bump up the size of your disk cache."
"QuickTime lets you play movies on your Mac."	"QuickTime is a system-level architecture for multimedia authoring and playback; it supports a wide variety of audio, video, and still-image formats."
"The iMac is cute."	"The iMac's form factor demonstrates Apple's commitment to forward-looking, user-oriented industrial design."
"The Mac isn't popular in business."	"The Mac platform isn't a major player in the SOHO and corporate space."

DEFEND YOUR PLATFORM



Now that you've made it to the top ranks of Macintosh bluffmanship, you're qualified to test your skills on the battlefield of cross-platform competition. Because adherents of Windows, Linux, and other operating systems are forced by the very nature of their labyrinthine platforms to pay close attention to minute technical details, we advise you not to take on these folks until you've honed your bluffing abilities on the easier prey of Macintosh users.

There's another factor you should bear in mind. Remember that schoolyard bully who was always taking junior karate classes and then went around dumping frightened little children—maybe including you—on their heads? In entrusting you with our knowledge, we ask only that you not use your newfound powers in the name of aggression. Rather, like Jackie Chan or *Kung Fu*'s Caine, you should use these techniques only in self defense, employing the virtual martial art of bluffery to deflect assaults rather than striking the first blow. Live and let live, that's our motto.

Snappy Comebacks to Stupid Platforms

Despite our advocacy of verbal nonviolence, there may come a time when you're forced to defend your Mac. What to do when a sauntering thug lunges at you with a techie put-down? Try deflecting the attack with one of these defensive maneuvers.

The attack: "No way is the PowerPC faster than a Pentium."
The defense: "RISC will always trump CISC."
You can trot out all the dancing Bunny People you like, but a processor family based on a Reduced Instruction Set Computing architecture—like, say, the PowerPC—is inherently more efficient than the Complex Instruction Set Computing architecture used in Pentiums.

The attack: "Apple doesn't give you technological choices."
The defense: "It's great to integrate."
Or, as Steve Jobs puts it, "Apple makes the whole widget." By maintaining tyrannical control over the hardware and software aspects of the Mac platform, Apple can decide by fiat that it's time to ditch legacy technologies like the Motorola 680X0 processor, NuBus, ADB, SCSI, and floppy disks, moving us forward into a new era of modern computing at a pace that the cat-herding communities of rival platforms can only envy.

The attack: "My OS is faster and more stable."
The defense: "Just you wait for Mac OS X."
A magical fusion of OpenStep's Unix-based architecture and the Mac OS interface, this next-generation operating system should be able to match your adversary's platform feature for feature.

Finishing Moves

If your assailant just won't back off, you may have to get nasty.

Against Windows: "Windows 2000 will never ship. It's Microsoft's Copland."

Against Linux: "Linux will never be a mainstream operating system. Most people just don't dig tweaking disk partitions that much."

Against BeOS: "Gee, haven't heard from that one since...oh, 1996. Shipped any apps lately?"

Against any OS: "Are you *really* sure your OS is Y2K compliant?"

Senior Editor Mark Simmons has violated the Bluffer's Code by revealing these secrets. Watch for his Fox special this fall, airing right after *America's Scariest Disk Crashes!*

Vimage CORPORATION

NEW MotionCam 350

USB Digital Camera
Motion JPEG Compression

Features

- Speedy ***hardware*** compression enables full-motion (30fps) capture!
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$149

NEW for the G3 Mac.

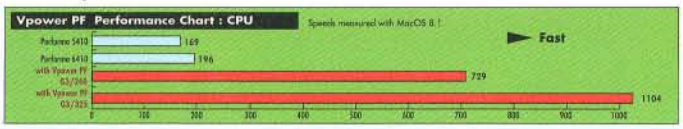
400MHz ZIF upgrade

G3 acceleration for your Mac!

Apple 54, 55, 64, 65 20th Anniversary Super Mac C500

"Freakin' Awesome" —MacAddict

Owners of the 54xx, 55xx, 64xx, 65xx and 20th Anniversary Macs are no longer left out in the cold! Keep your machine at the forefront of PowerPC technology simply by plugging a Vpower G3 upgrade into its Level 2 cache slot. New copper chip technology runs cooler and faster than ever, making the 320/325-MHz upgrade particularly ideal.

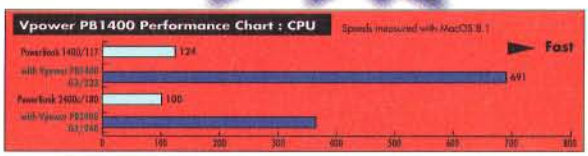


NEW PowerBook 2400 & 1400

Macworld

Installing a Vpower G3 upgrade turns your PowerBook 2400 into the fastest notebook computer in the Mac universe! And high-speed combined with low battery consumption make the PB 1400 G3/233 the winner in its class!

As seen in MacWorld March 1999

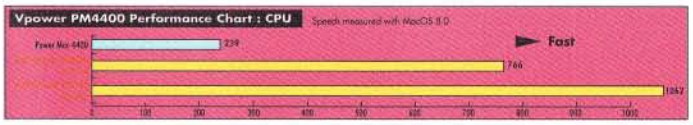


Power Mac 4400 StarMax 3000 & 4000

"[H]efty speed boost" —MacWorld

Macworld

The word is out: Vimage is the industry leader when it comes to producing innovative upgrade solutions for "dead-end" machines. Simple, plug-and-play installation allows you to enjoy all the benefits of a G3 machine in just minutes. There's never been a better time to take your computer to the next level of performance.



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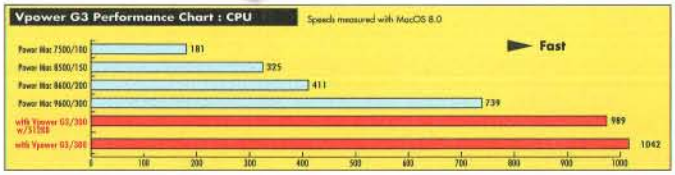

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DV DEEDs

GET BUSY and download QuickTime 3.0.2 and demos of After Effects 3.1 and Media Cleaner Pro 3.1.2 from The Disc.

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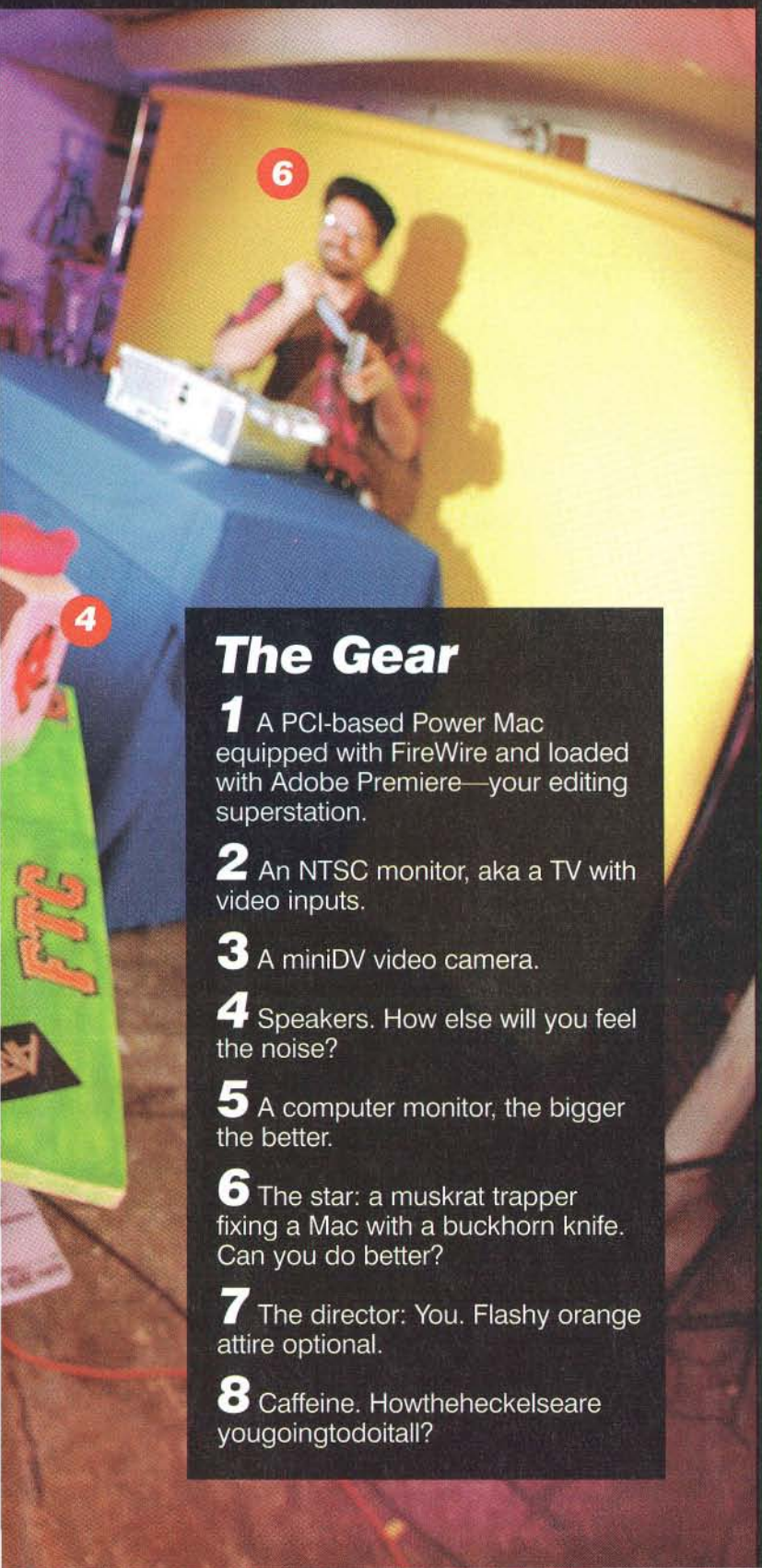


The Gear

1 A PCI-based Power Mac equipped with FireWire and loaded with Adobe Premiere—your editing superstation.

2 An NTSC monitor, aka a TV with video inputs.

3 A miniDV video camera.

4 Speakers. How else will you feel the noise?

5 A computer monitor, the bigger the better.

6 The star: a muskrat trapper fixing a Mac with a buckhorn knife. Can you do better?

7 The director: You. Flashy orange attire optional.

8 Caffeine. Howtheheckelseare yougoingtodoitall?

MAKE BROADCAST QUALITY VIDEO IN YOUR GARAGE!

by Robert Capps

Prepare to burn, Hollywood, burn. Not since Beavis and Butthead has Tinseltown faced so deadly a duo as digital video (DV) and the Mac. These two superpowerful technologies, combined with FireWire, Adobe Premiere 5.1, and QuickTime 3.0, could bode the end for multimillion-dollar film houses as movie magic explodes on the desktop.

Garage directors like you—our loyal *MacAddict* reader—can now turn spare rooms into full-fledged production studios for as little as $3,800, including a Mac, DV camera, and software. For those who already own Power Macs, the price drops to under $1,500—a true bargain considering that just a few years ago aspiring Tarantinos would have had to part with up to $200,000 for an equivalent system. Can you say "Expensive audio-video capture systems requiring ultrapricey RAID arrays and high-end hard drives?" You can't? That's OK, because thanks to DV you no longer have to.

To level the playing field between you and those big-studio hot shots, we're showing you how it all comes together. We're giving away the farm with detailed directions on how to configure your system, shoot vivid scenes, and patch it all together. We'll even teach you how to distribute your movies to the Web, a CD-ROM, or a VHS tape in compressed but not compromised form. The only qualifications are ideas and talent, so put on your thinking cap, pull up your director's chair, and get ready to roll...video, that is.

THE SETUP

Before you can build your own filmmaking empire, you need the right tools. While you don't have to go out and spend thousands of dollars on high-end SGI workstations, your studio should at least have a Power Mac G3 or PCI-based Mac equipped with FireWire, a DV camera, and a copy of Adobe Premiere.

Get Digital

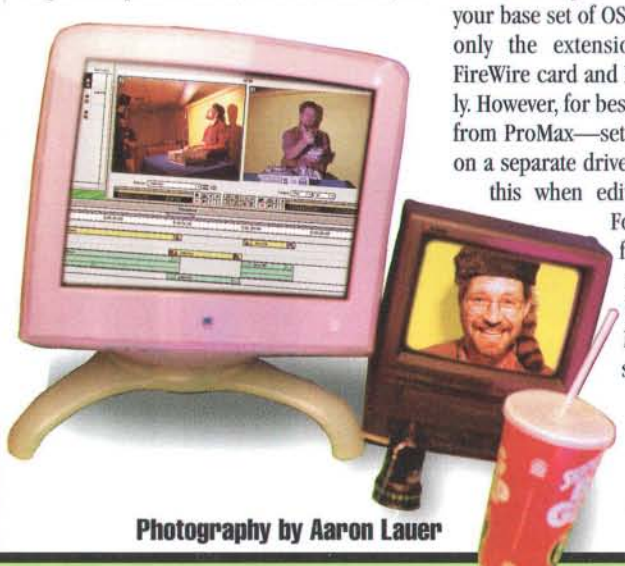
There are several types of DV formats, but the most economical and most common (and the one we're going to focus on in this article) is called miniDV, referring to the tiny tapes these cameras use. Sony, Canon, and JVC all offer miniDV camcorders ranging in price from $1,200 to $4,700. (For a rundown of cameras, see the sidebar "DV Cameras.")

Rev Up for FireWire

After choosing a DV camera and before you do anything else, you should prep your Mac with FireWire. If you're unfamiliar with the hottest bus ride to hit the Mac since, uh...well, USB, you need to get up to speed. FireWire is a type of bus—like SCSI—that allows you to plug high-bandwidth devices such as DV cameras, hard drives, and CD-ROM burners directly into your Mac. If you're lucky enough to have a brand-new, quad-handled, blueberry G3 tower, you've got two FireWire ports built right in. To put your Mac on working terms with DV, after installing Adobe Premiere you just drag the two DV Premiere plugs from your Mac's FireWire folder into Premiere's plug-in folder.

If you don't have a new Power Mac G3 tower, you'll need a PCI-based Power Mac to go digital (sorry, iMac owners, no DV for you just yet). The owner of a PCI-based Power Mac has several PCI FireWire card options. Both Digital Origin (formerly Radius; 650-404-6000, http://www.digitalorigin.com) and Adaptec (408-945-8600, http://www.adaptec.com) offer FireWire cards in the $500 price range. Digital Origin's card even comes with its own capture and viewing software, MotoDV, though you'll still need Premiere for editing. ProMax Systems (800-977-6629, http://www.promax.com) offers FireMax, a card with specialized driver software providing advanced features such as solid batch capturing and dive control. The card, which comes bundled with Premiere for $499, is the best deal for the power we've found. But if you're really tight on cash, Apple offers a PCI FireWire card for $300, although—as you'll see—in terms of features you get what you pay for.

Once your Mac is FireWire ready, you'll want to optimize your system for transferring footage from your camera to your Mac. At the minimum, you should turn off all unnecessary extensions to avoid any potential conflicts. If you're not sure which extensions are expendable, start by turning on your base set of OS extensions, then activate only the extensions you need for the FireWire card and Premiere to run smoothly. However, for best results, take a tip we got from ProMax—set up a new System Folder on a separate drive partition and boot from this when editing video. This System Folder should remain free from the clutter that results from installing bulky programs like Microsoft Word and Netscape Navigator.



Photography by Aaron Lauer

DV RULES

Unlike analog video (your VHS, Hi8, and Beta types), DV doesn't waste time with waves. It cuts right to the chase with its basic approach—ones and zeros, ons and offs, bits and bytes. This simplicity is DV's strongest advantage over analog video.

When you transfer analog video, your computer must translate the signal from waves to ones and zeros. Each conversion from tape to computer and back again degrades the video quality. With DV you don't have to deal with any messy conversion process, as DV is already in a ones and zeros format. Even when dubbing from one DV tape to another, you're still working with the same ones and zeros, which means your copy of a copy looks as good as the master tape.

DV also has a lower play rate than analog video, which means you don't need superfast (and superexpensive) hard drives to process it. DV is a compressed format, so it streams into your Mac at a manageable 3.6 MBps, plenty slow enough for an Ultra-ATA drive to handle. (You'll find these drives in the new G3 minitowers, and ProMax offers a PCI card for PCI-based Macs.)

Analog video formats, however, need to come into the Mac at as high a rate as 12 MBps. Although FireWire can handle up to 50 MBps and would have no problem getting either digital or analog video into your Mac, a normal hard drive would croak under the 12 MBps of pressure. In order to process analog video, you'd have to either use the very fastest drives money could buy or get a striped RAID—two hard drives attached to each other to increase throughput (and price!).

Last, but not least, DV simply looks better than analog video. DV's higher resolution makes images look sharper, while its superior color handling keeps colors from bleeding onto objects next to them, as they tend to do on analog video.

Toughen Up Your Hard Drive

The next step in getting your Mac ready for DV is acquiring a hard drive that's fast enough and big enough to accept video. For the best results, you'll want to use a different hard drive for saving video than the one your system runs on. Even though DV doesn't require the kind of fast hard drive setup that normal (analog) video does, you still want a drive with more pep than your average SCSI drive. ProMax offers the most economical way to acquire a dedicated, speedy video drive, its new TurboMax Ultra-ATA PCI card. For a little over $500 you can get an Ultra-ATA 16.8GB drive (capable of holding over an hour of video) plus the card.

Spoil Yourself with Extras

If you can swing it, you should also invest in a small color TV to use as an additional monitor in your studio setup. When picking out your NTSC monitor (industry lingo for TV), make sure it sports video and audio inputs so you can take advantage of a FireWire card's ability to send video signals back to the DV camera as you're viewing scenes in Premiere. This means if you attach a TV to your camera's video outputs (most cameras have RCA video jacks as well as a FireWire port), you can see the footage you're editing on both the TV and your Mac's monitor simultaneously. If you're editing large video files and a full-size preview is too much for your processor to handle, Premiere may offer only small, low-resolution previews on your computer monitor. Watching the footage on a TV can show how your final results will really look.

Unfortunately, Apple's FireWire software does not send a signal back to the camera, so you can't preview your footage on a TV as you edit it in Premiere. However, both Digital Origin and ProMax offer software you can substitute for Apple's if you have Apple-branded FireWire ports.

Shooting Tips

When you've put the final touches on your script—or you're about to go crazy and just want to film something—keep these guidelines in mind as you begin shooting.

Keep Sets Well Lit

Lighting makes or breaks your film. Give your sets plenty of wattage, and read up on lighting techniques. In addition to making your flick look a lot better, well-lit video also compresses better, so you'll get better film quality if you want to shrink your movie down to fit on a CD-ROM or the Web.

Use a Tripod

Smooth footage makes video look significantly more professional. If possible, use a steady cam or crane to keep your camera from getting the jitters, though even a nice tripod will do the trick. When compressing, your software looks for pixels that stay the same across frames, so steady shooting also results in more efficiently compressed video.

Avoid Busy Backgrounds

Another trick compression software uses to shrink video is to look for large spaces of steady color and assign one color across all those pixels. This is really hard to do if you have lots of small items in your scene or too many different colors competing in the background.

Avoid Pans and Zooms

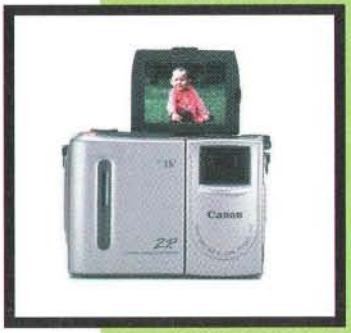
Unless you've got a stainless-steel stomach, you'll find too many pans and zooms dizzying. It also doesn't compress well (see "Use a Tripod" above). Of course, you will break this rule (probably often), but at least try to pretend that you care.

MiniDV cameras vary greatly in price depending upon their image quality, type of lens, and features (digital zoom, changeable lenses, internal editing, and such). Here are a few cameras you may want to check out when shopping for your DV device.

XL-1
COMPANY: Canon
CONTACT: 800-828-4040, http://www.canondv.com
PRICE: $4,699
Canon's chainsaw-style XL-1 is possibly the dopest miniDV camera made. Its three high-quality CCDs (the components that take in an image and turn it into ones and zeros), detachable lenses, shotgun mike, and endless feature set will make anyone who can spell DV drool.

DCR-TRV900
COMPANY: Sony
CONTACT: 800-222-7669, http://www.sony.com
PRICE: $2,299
Sony's TRV900 offers three CCDs at a reasonable price. The TRV900 and its TRV9 younger brother offer an analog-to-DV converter in the camera, so you can convert all your old Hi8 footage to miniDV.

Vistura
COMPANY: Canon
CONTACT: 800-653-3666, http://www.canondv.com
PRICE: $1,699
Canon's one-chip midrange consumer offering looks a lot more like a family camcorder than the XL-1 or ZR do. Lots of other solid features make the Vistura a good choice.



ZR
COMPANY: Canon
CONTACT: 800-828-4040, http://www.canondv.com
PRICE: $1,199
The ZR looks more like a point-and-shoot 35mm photo camera than like a miniDV device. The ZR is *the* most economical camera we found, and it still comes with a handy (yet small) LCD screen. Who can knock DV for a little over a grand?

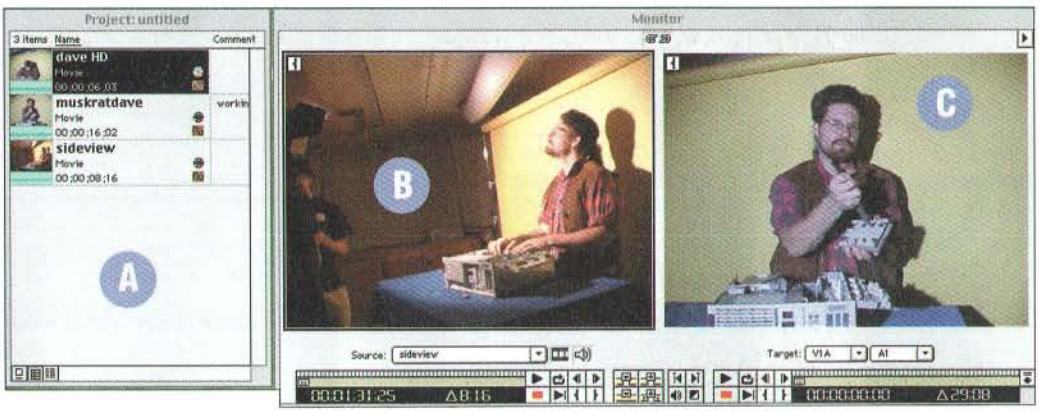
THE EDIT

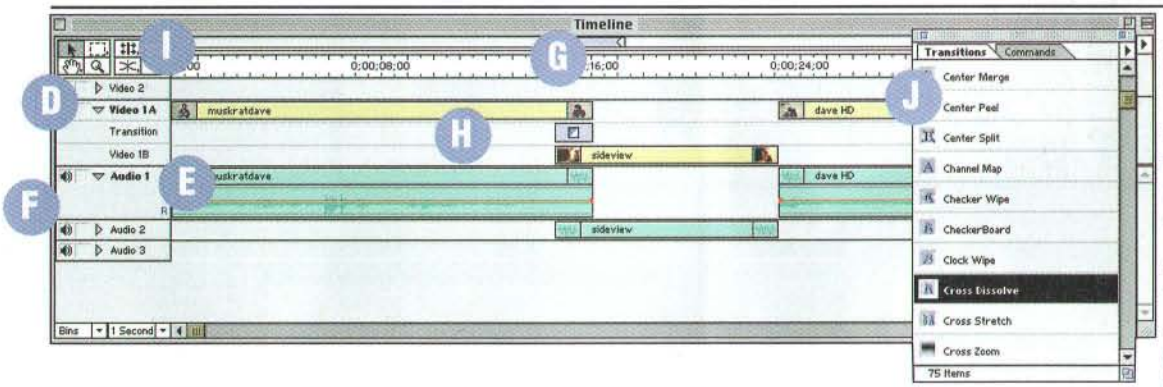
In some ways Adobe Premiere 5.1 is still a really clunky, moody, awkward application. When you fire it up, don't be surprised if you check and recheck settings and still find functions that don't work right. Be consoled, though—this version is much easier to access than Premiere's previous incarnations, and when it gets up and running right, you'll have everything you need to create pro video. Currently no other program in Premiere's price range even comes close.

A. Project Window
As you bring tracks into Premiere via the Movie Capture option under the File menu, save them to your Project window.

B. Source Window
The Source window shows the source clips that you've loaded by dragging them from the Project window. Prep and trim video clips here for use in the timeline.

C. Target Window
The Target window lets you monitor footage assembled in the timeline.





J. Transitions Window
Here's where you'll find transitions to add to your video. If you select Animate from the Transitions palette's menu, the icons give you a preview of each transition.

I. Additional Video Tracks
As with audio tracks, you get up to 99 of these. You'll use them mostly for superimposing additional footage.

D. Video 1A Track
Load a piece of captured footage into the timeline by dragging it onto the Video 1A track. Put other clips right after the first clip, on this track or on Video 1B.

E. Audio 1 Track
Any audio that accompanies video footage in the Video 1A track appears on this track. Click the arrow next to the track to see and adjust the audio's waveform.

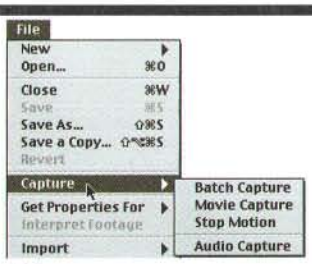
F. Additional Audio Tracks
You get up to 99 of these. Place music, overdubs, sound effects, and other audio files onto these tracks.

G. Work Area Bar
This allows you to preview how a section of the movie will look rendered. Just adjust the bar so it is above the desired clip and press Enter.

H. Transition
For a transition, footage on the Video 1A and Video 1B tracks must overlap slightly. Then you just drag a transition from the Transitions palette to the Transition track.

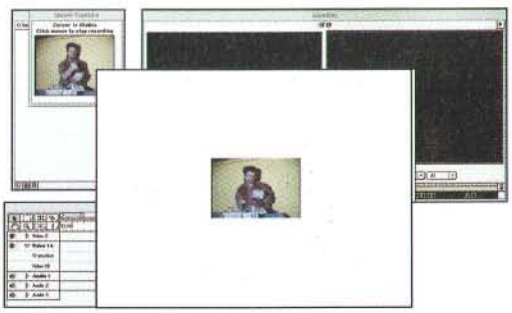
Get It on Video

Getting a movie from your head to the camera can be difficult, but getting a movie from the camera to your Mac is a snap. Just fire up Premiere and follow along.



1 Once you have fully configured Premiere and connected your camera to your computer through FireWire, go to the File menu in Premiere, click Capture, and select Movie Capture.

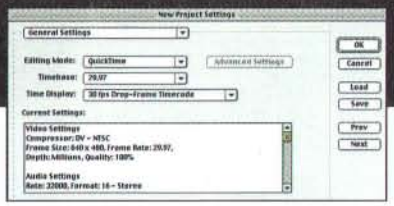
2 After you select Movie Capture, Premiere presents you with this window. Set your camera to VCR mode and press Play. You should see your video playing in the Movie Capture box.



3 Click the Record button, and a larger window showing the video you're capturing pops open. Just click the mouse when you want to stop recording.

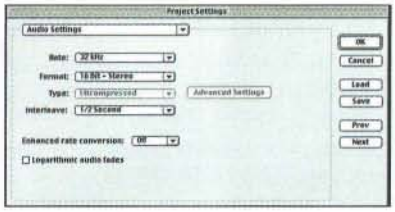
Go Configure

When you launch Premiere, it presents you with a series of screens asking you to configure your setup. Follow these steps to start off on the right foot:

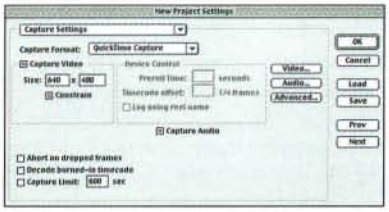


1 American video plays at 29.97 frames per second, and so should yours. From here, either click the Next button or drag down a new settings window under General Settings.

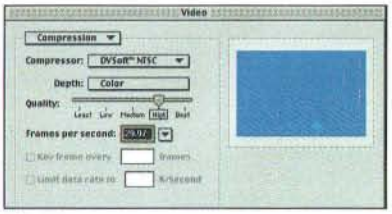
2 Set your frame size to full screen—640 pixels wide by 480 pixels high. Even though you don't want to compress the video, choose DVSoft NTSC as the compressor.



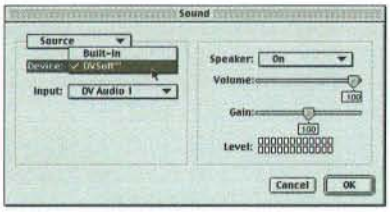
3 Most DV camera sound runs at either 32KHz or 48KHz. Check your camera's manual and set this dialog box to match. Otherwise, you could end up with crackles or a hiss.



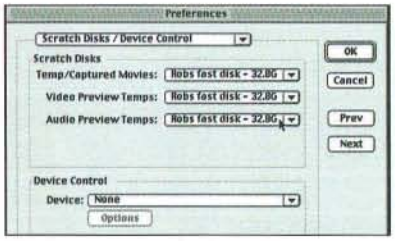
4 Capture your video at full size: 640 pixels wide by 480 pixels high. If you need to shrink it for use on the Web or a CD-ROM, reduce its size after editing.



5 Again, select DVSoft NTSC for the compressor. Click the Compression menu at the top of this dialog box and make sure you have Source set to DV drivers.

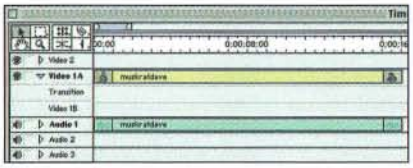


6 Make sure you have your audio source set to your FireWire card's DV drivers as well—Premiere likes to default to Built-In.



7 Once you have all your initial settings configured and have launched Premiere, under the File menu in Preferences select Scratch Disks/Device Control. For your scratch disk, choose a drive you are not currently using as your main system, and make sure it can handle the video speed requirements.

4 When you are done capturing a clip, it opens in a Monitor window complete with a control bar. Drag the actual image from this window to your Project window, which prompts you to save the image. Once you've saved it, drag the clip to the Source window and set beginning and ending points.



5 You're now ready to add your clip to the timeline. Just drag it from the Source window to a desired place on the timeline. Repeat this process with all the other clips you want to capture.

ADDITIONAL SOFTWARE

Premiere makes up the skeleton of an inexpensive video-editing setup, but someday you may want to add some meat to those bones. For big-time effects and sound, as well as high-quality compression, you'll need additional software. Here are a few suggestions for your next editing addition.

Media Cleaner Pro
Company: Terran Interactive
Contact: 800-577-3443, http://www.terran.com
Price: $399

Media Cleaner Pro is a must-have for anyone who wants to put movies on the Web or on a CD-ROM because it shrinks video much better than Premiere. The program cleans up and compresses your footage, and allows you to adjust the data rate at which the movie plays. Media Cleaner Pro also lets you easily set up different-size versions of the same movie on your Web site so that people with different speed connections can get a version to match their modem.

After Effects
Company: Adobe
Contact: 800-685-3504, http://www.adobe.com
Price: $995 (standard), $2,195 (production bundle)

After Effects is *the* compositing program for adding effects to movies. You can use it to spice up footage with animations, laser beams, crackling fires, and cool filters such as blurs and grains. You can also import files from Adobe Photoshop or Illustrator to create superimposed layers on your video. And thanks to After Effects' plug-in architecture, you'll never run out of third-party offerings for even more ways to fire up your flick.

Vision DSP
Company: Opcode
Contact: 650-429-2400, http://www.opcode.com
Price: $495

Vision DSP is a scaled-down version of Opcode's digital audio and MIDI sequencing program, Studio Pro. Basically, both of these programs allow you to layer and adjust audio in multiple tracks. You can open Premiere files (as well as QuickTime files) in Vision and add layers of audio with the sequencer's advanced tools. When you reopen the file in Premiere, all the Vision audio tracks combine neatly into one Premiere audio track. It's an ideal way to make sound effects, music, or overdubs sound their best.

Electrifier Pro
Company: Terran Interactive
Contact: 800-577-3443, http://www.terran.com
Price: $595

Electrifier Pro takes your movies to the next level by allowing you to add interactivity via small games, buttons, and QuickTime animations. For serious filmmakers intent on worldwide distribution, Electrifier can also help you make great QuickTime-based presentations of your movies, which you can easily distribute over the Web.

DISTRIBUTION

OK, shooting has wrapped, editing is done, and you're dying to show off your feature presentation to an unsuspecting audience. You can either throw it onto a VHS tape, compress it down for a CD-ROM, post it to the Web, or record it on film and enter it at Cannes in hopes of picking up a distributor. We'll help you out on the first three, but remember whom to thank at the Oscars if you find fame at the festival.

VHS

Once you've made your movie, the first thing you want to do—no matter what form you have in mind for the final destination—is get it back to a miniDV tape. Storing your opus this way preserves an uncompressed, full 640 by 480 version of your movie digitally, which prevents the quality loss that occurs when recording in analog formats. It also frees up space on your hard drive. If you want to make a Web or CD-ROM version later, you can reimport the movie from this tape and adjust it.

THE DV PRINT TO VIDEO option gets your movies back to miniDV.

To get started, put a DV tape into your camera, put the camera in VCR mode, and attach it to your computer through FireWire. With your movie open in Premiere, select Export from the File menu. You have to make a few choices in the Export submenu. For getting the movie to your camcorder, you want the DV print-to-video option that your FireWire card's drivers installed. Once you select this, your movie begins to render and then record onto the DV tape in your camera.

Once you've digitally preserved your movie, you can plug your camera into your VCR through its RCA analog jacks and record the movie onto VHS as it plays on your TV. Be sure to record each VHS copy of the movie from the DV camera. As soon as you have 20 or so, start sending them out to friends and distribution houses.

CD-ROM

To burn your movie onto a CD-ROM, you need access to a CD-ROM burner. Ideally, you should also have Terran Interactive's Media Cleaner Pro, as you'll need to reduce the movie's file size to play it on your computer. Premiere can do the job, but Media Cleaner Pro will do it better.

ADJUST FINAL RENDER settings from the Export Movie dialog box.

Start by exporting your movie. In the Export submenu, choose Movie (if you are using Media Cleaner Pro, choose Media Cleaner Export and make the following adjustments). An Export Movie dialog box appears; click Settings.

In Export Settings, reduce your movie's physical size and frame rate. Set your frame rate to 15 fps (show every other frame) and your movie size to 320 by 240.

For the best-quality compression, use Sorenson, one of the great new compression codecs QuickTime 3 offers, as your compressor—but be aware that you must have QuickTime 3 to use it. If distributing your movie to the largest possible audience is more important to you than top-quality compression, you may want to use Cinepak instead.

Finally, in the Video Settings dialog box, set a maximum bit rate so your movie doesn't come across as choppy. Where it says Limit Data Rate To *X* K/Sec, type in your data rate—you should probably enter a data rate below 180. If you are only giving the movie to people with Power Macs, you can set it a bit higher.

After you get the video settings down, reduce the audio settings. This won't make as big a difference, but it's another place to reduce data if the final result is coming out too big. Once everything is set, click OK, title your movie, and render. You'll need to open the movie in QuickTime Pro's Movie Player once it's rendered to save it as a self-extracting file, but it will be ready to go on a CD-ROM.

Getting a Good Rate

Deciding on a size and data rate for your movie is a very complex process. The QuickTime experts at Terran Interactive, makers of Media Cleaner Pro, have come up with the following sizes and rates to use as guidelines, but they still stress trial and error as the best way to decide.

FRAME SIZES

Modem: 160 by 120

T1: 240 by 180

CD-ROM: 320 by 240

DVD-ROM: 540 by 480

DATA RATES

28.8-Kbps modems: 2.5 KBps

56.6-Kbps modems: 5 KBps

ISDN: 12 KBps

T1: 20 KBps

CD-ROM: 170 KBps to 200 KBps

DVD-ROM: 1 MBps

The Web

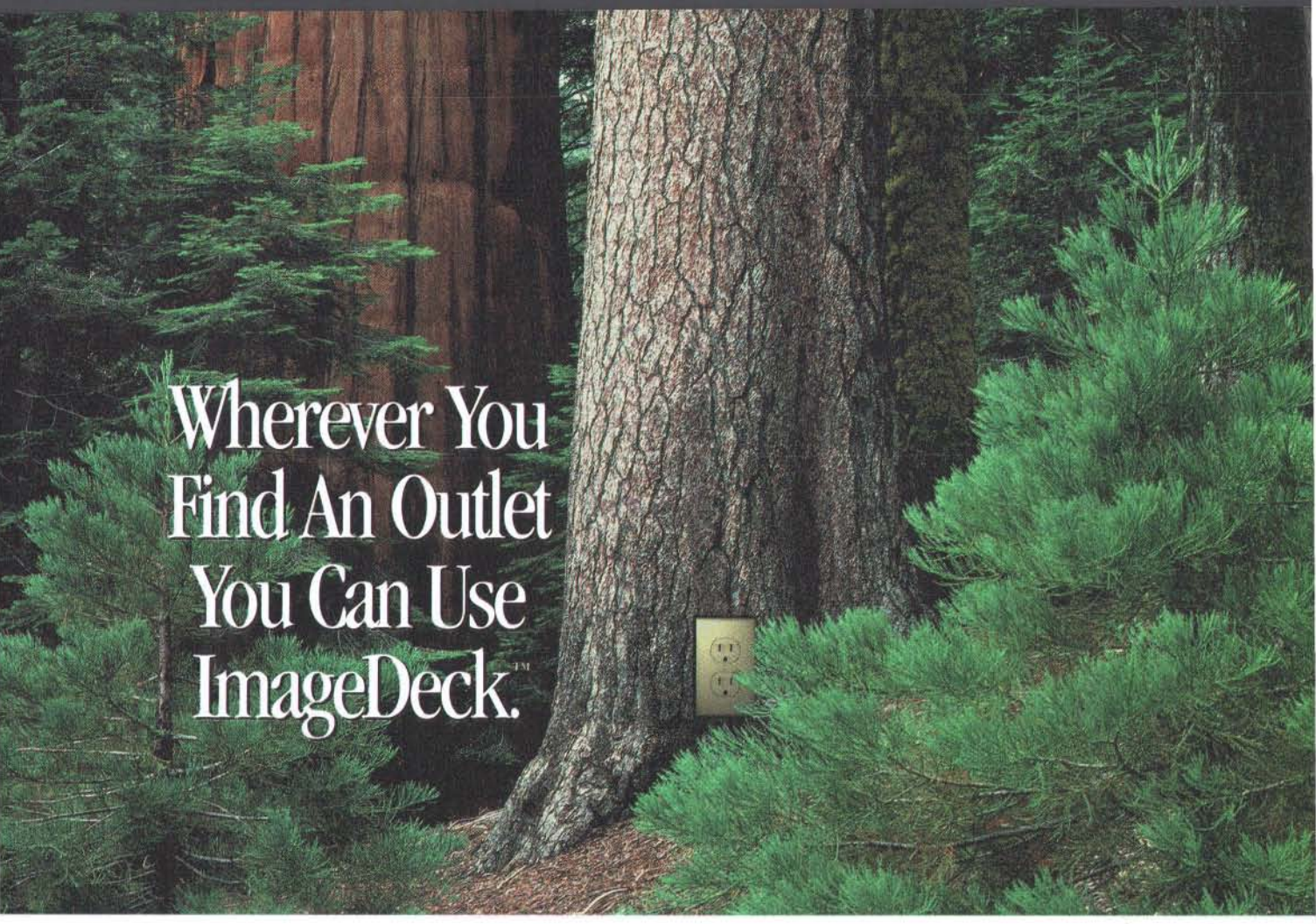
Getting your video ready for the Web, like prepping it for a CD-ROM, requires that you reduce the size and rate of the movie significantly. Once again, Premiere does this competently, but you will get much better results with Terran Interactive's Media Cleaner Pro.

Follow the steps for CD-ROM production—exporting to Movie (or Media Cleaner Pro)—but reduce the movie even more (see "Getting a Good Rate" at right). You should also reduce your frame rate to 10 fps (show every third frame) or less. Again, use the Sorenson compressor unless you want the broader installed base Cinepak offers.

Limit the movie's data rate when preparing it for the Web and reduce the audio settings as well. If you don't own Media Cleaner Pro, you're done. Export your movie, make it self extracting by saving it from QuickTime Pro's MoviePlayer, and embed it in your Web page.

However, if you do have Media Cleaner Pro, you may want to make a reference movie. To do this, you will need to make a version of your movie for each Internet connection rate: 28.8 Kbps, 56.6 Kbps, ISDN, and T1. You can then use Media Cleaner Pro to make a reference movie, which will interpret the speed of a given user's connection and play the appropriate movie. For more information on how to set this up, consult the Media Cleaner Pro manual.

Robert Capps is currently filming an autobiographical documentary titled *Football in the Groin.*



ImageDeck by MICROTEK is the first *Stand-Alone Scanning Appliance*™ for scanning photos or documents — *without a computer connection!*

No complicated connectors. No compatibility problems. No scanning software to learn. *Just plug it in and scan!* And you never have to tie up a computer again.

ImageDeck automatically crops snapshots or captures photos up to 8.5" x 11.7" in rich 36-bit color depth at resolutions up to 600 dpi with amazing detail.

With its push-button control panel, ImageDeck is as easy to use and share as an office copier. Save photos or documents to Iomega 100MB Zip® disks or 3.5" diskettes, then take them back to your Macintosh for email attachments, presentations or other creative projects.

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the stand-alone scanning appliance

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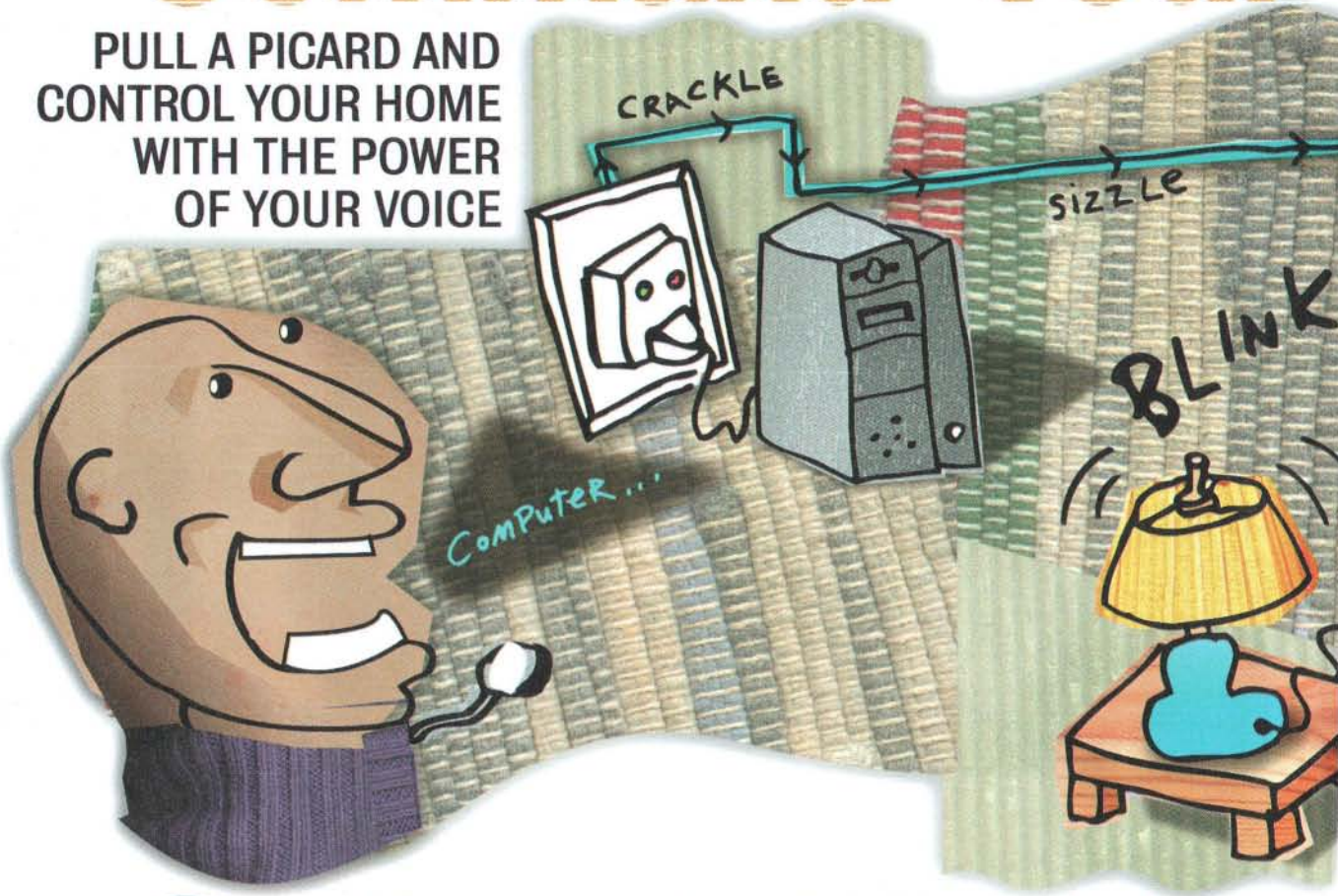
Command Your

PULL A PICARD AND CONTROL YOUR HOME WITH THE POWER OF YOUR VOICE



C'mon, admit it—if you've ever watched an episode of *Star Trek: The Next Generation,* you've wished you could say "Earl Grey, hot" in your best British accent and have some object in the room magically present you with a cup of tea. However, odds are the only ones to hear you would be either your dog or cat (both of whom lack opposable thumbs and thus can't make a decent cup of tea), or your significant other (who would probably reply with some variation of, "Yeah, I'd like one too, while you're up").

Well, no more. Now you can turn your Mac into a reasonable facsimile of the Enterprise computer with a wireless microphone, Apple's Speech Recognition software, and X10 home control hardware and software, all held together with a little AppleScript. It's not as complicated as it sounds, and it won't cost you too much. If you already have a Mac capable of speech recognition (any Power Mac with a PlainTalk microphone), you can put the whole system together for around $250.

For our sample project, we're going to make a lamp turn dim with a simple voice command. We'd like to tackle the whole Earl Grey tea dream scene right here and now, but that would require one of three methods beyond the scope of this how-to: an advance setup, such as filling an electric tea maker with tea and water, which ruins the effect; a Rube Goldberg contraption involving an ADB I/O unit, several motors, and lots of frustration; or a very expensive autofeeding tea brewer. Let's go light and easy instead.

ON THE DISC: Apple's Speech Recognition software and demos of XTension 2.0 and MouseHouse 2.0.

By Command Master David Reynolds

Mac

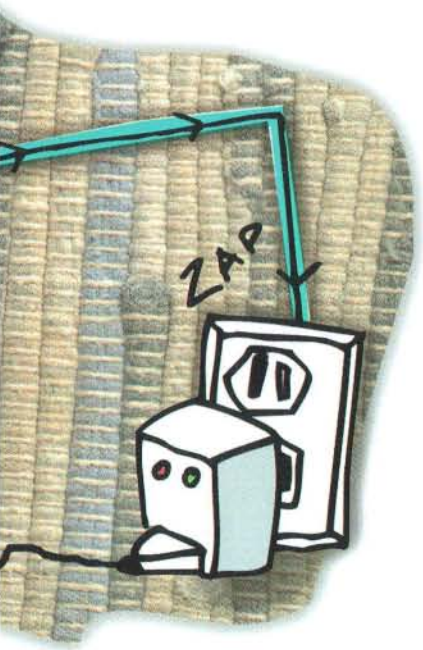


Illustration by Ken Bousquet

Bringing Home the Automation

So where can you buy all of this high-tech home-automation equipment? Probably not at your local WalMart. But if you want to get the interface, software, and lamp module in one fell swoop, spring for the SH-CK11 starter kit from Advanced Services (800-263-8608, http://st7.yahoo.com/asihome/homautforyou.html). For $159, you get everything you need to get started with this how-to, plus a few nifty extras. Another great place for all kinds of X10 stuff is SmartHome (800-762-7846 or 949-221-9200, http://www.smarthome.com/mac.html).

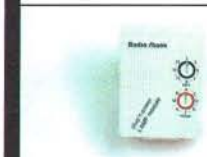
You can also find X10 modules and gadgets at electronics supply stores such as Fry's or Radio Shack. As long as the hardware works with an X10 controller, it should fit into your system just fine.

EQUIPMENT LIST

You're going to need some equipment to make all of this work. Here's the checklist:

CM11A X10 interface—This is the magic box that enables your Mac to communicate with X10 control boxes via your home's electrical wiring. When you get your CM11A X10 interface, be sure it includes a Mac cable—typical units ship with a cable for a PC serial port, which just won't cut it with your Mac. Price: around $30.

Home automation software—There are two options here: Sand Hill Engineering's XTension 2.0 (407-349-5960, http://www.shed.com), and Swing Software's MouseHouse 2.0 (810-336-9000, http://www.mousehouse.net). Both will work with an X10 interface. We chose XTension for this article because of its integrated AppleScript support. Price: $99.95.



Lamp control module—This is the receiver that controls the lamp you'll be using. It plugs into the wall and eavesdrops for commands from the CM11A X10 interface. When the module receives a command (such as on or off, or dim to 50 percent), it carries out that command. With the lamp plugged into it, the module can control the flow of power to the lamp. Price: Under $10.

Lamp—You've used one of these before (we hope). It's essentially a couple of wires hooked up to a light bulb with a switch in one of the wires. Make sure the lamp switch is on while using it with the X10 system, or the trick won't work. Price: $5 to $250, depending on your tastes.

AppleScript—AppleScript is now a standard part of the Mac OS, but if you don't have it installed, you'll need to do so before starting this how-to. You'll use AppleScript as the connection between Apple's speech recognition software and XTension. Trust us—it's easy.

Apple's Speech Recognition software—Again, most later versions of the Mac OS ship with Speech Recognition as an optional installation. In case yours didn't, we included the latest version of the software on The Disc. It's that simple. Price: free!

Speech recognition–capable Macintosh—Not all Macs are capable of speech recognition. Only Power Macs running System 7.5 or later can do the job. Price: varies tremendously. (New G3 towers will need a PCI serial card for this to work.)

Wireless audio link—This high-frequency, high-quality radio transmitter-receiver duo lets you take your microphone anywhere in your house. We used the 170MHz Radio Shack Optimus Professional Wireless Audio Link System (catalog number 32-1235) for our setup. It includes both transmitter and receiver. Price: $80.

Lavalier mike—You need an unobtrusive lavalier microphone with a broad frequency response. We used a Radio Shack Optimus Tie Clip Microphone (catalog number 33-3013) for our mike—it's a broadcast-quality omnidirectional mike with a 70MHz to 16,000Hz frequency response, sufficient for speech recognition. Price: $25.

Audio cables—The audio output from the back of the wireless microphone receiver is probably not a 1/8-inch stereo plug, so you'll have to buy a combination of cables and adapters to end up with a 1/8-inch stereo plug on the end of the audio output. This usually takes the form of a male mono RCA plug to a male 1/8-inch stereo plug, but just ask for help if you're not sure. Price: under $10.

The ensuing look of awe on your friend's face—Priceless.

PHASE 1 Lay the Foundation

Equipment:

- CM11A interface
- X10 lamp module (an older CP290 controller will work here as well)
- A Mac capable of speech recognition
- XTension 2.0 (the demo version only works with the CP290 controller—the full commercial version works with X10 and Lynx systems as well)

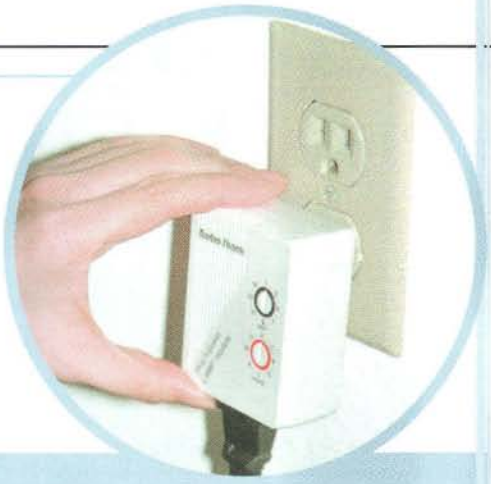
STEP 1 Install the CM11A interface.

In order for your Mac to control anything in the real world, you have to install the CM11A home controller. Think of it as plugging a walkie-talkie into your Mac. First plug the CM11A into a wall socket. Then plug the serial cable into the modem port (you can also use the printer port if necessary), and plug the other end into the CM11A. In our experience, a surge suppressor can interfere with the signals the CM11A sends, so don't plug it into one. Since the CM11A has a pass-through outlet on the front, you should be able to plug something else into this outlet, so you won't lose an outlet to the CM11A interface.

STEP 2 Install the lamp and X10 lamp control module.

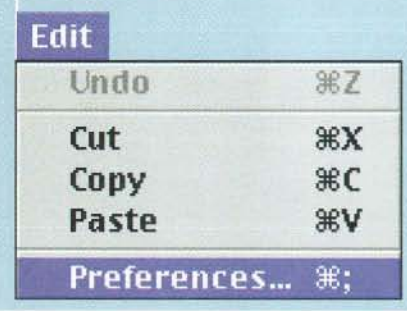
It's time to plug in the X10 lamp module. It should have two dials on the front, one with letters and one with numbers. These represent different addresses—think of them as different channels where the lamp module will be listening for commands from the CM11A. Set the lettered dial to A and the numbered dial to 1. The lamp module now has the address A1. Plug the lamp module into a wall outlet, and then plug the lamp into the outlet on the bottom of the lamp module. Switch the lamp on. It shouldn't light up yet, but it will soon. Congratulations—you've just set up your first X10 device.

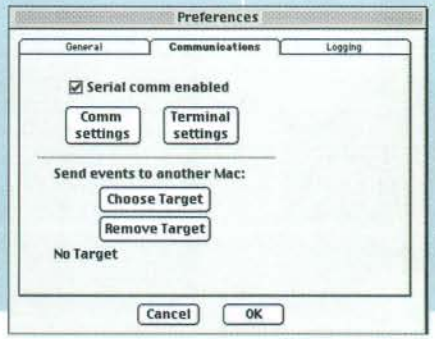
CAUTION: Be sure you don't plug anything other than an incandescent lamp into the lamp module—otherwise you might overload the module and burn it out.

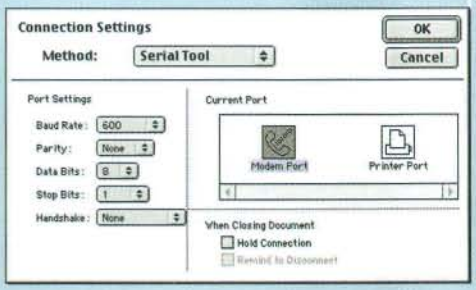


STEP 3 Install the XTension 2.0 software.

This is pretty easy stuff. Just copy the XTension 2.0 software from the floppy disk to your Mac's hard drive, and run it. (Yes, it currently only comes on floppy disk, but since it requires a serial port, owners of iMacs and new Power Mac G3 towers are out of luck anyway.) You'll be asked to insert the master floppy disk to unlock the copy of XTension. Once that's done, you need to set up XTension to recognize the CM11A interface. Choose Preferences from the Edit menu. In the dialog box that pops up, select the Communications tab and make sure the Serial Comm Enabled check box is checked. If you want to twiddle with the actual communications settings for some reason (such as switching to the printer port), click the Comm Settings button and make your changes in the window that pops up. Be warned, though, that these are preset for best results, and changing them may make it more difficult for XTension 2.0 to communicate with the CM11A. Finally, test out your connection by choosing Test Communications from the CM11A menu.

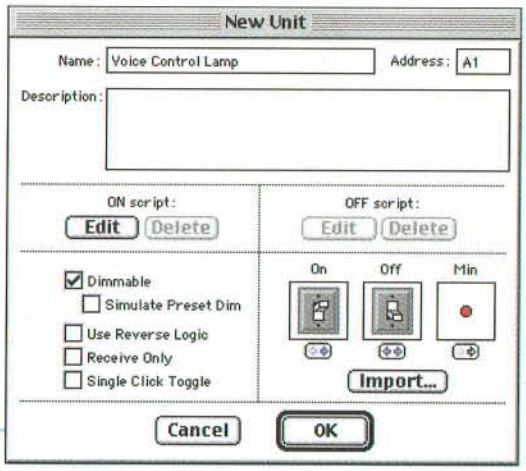


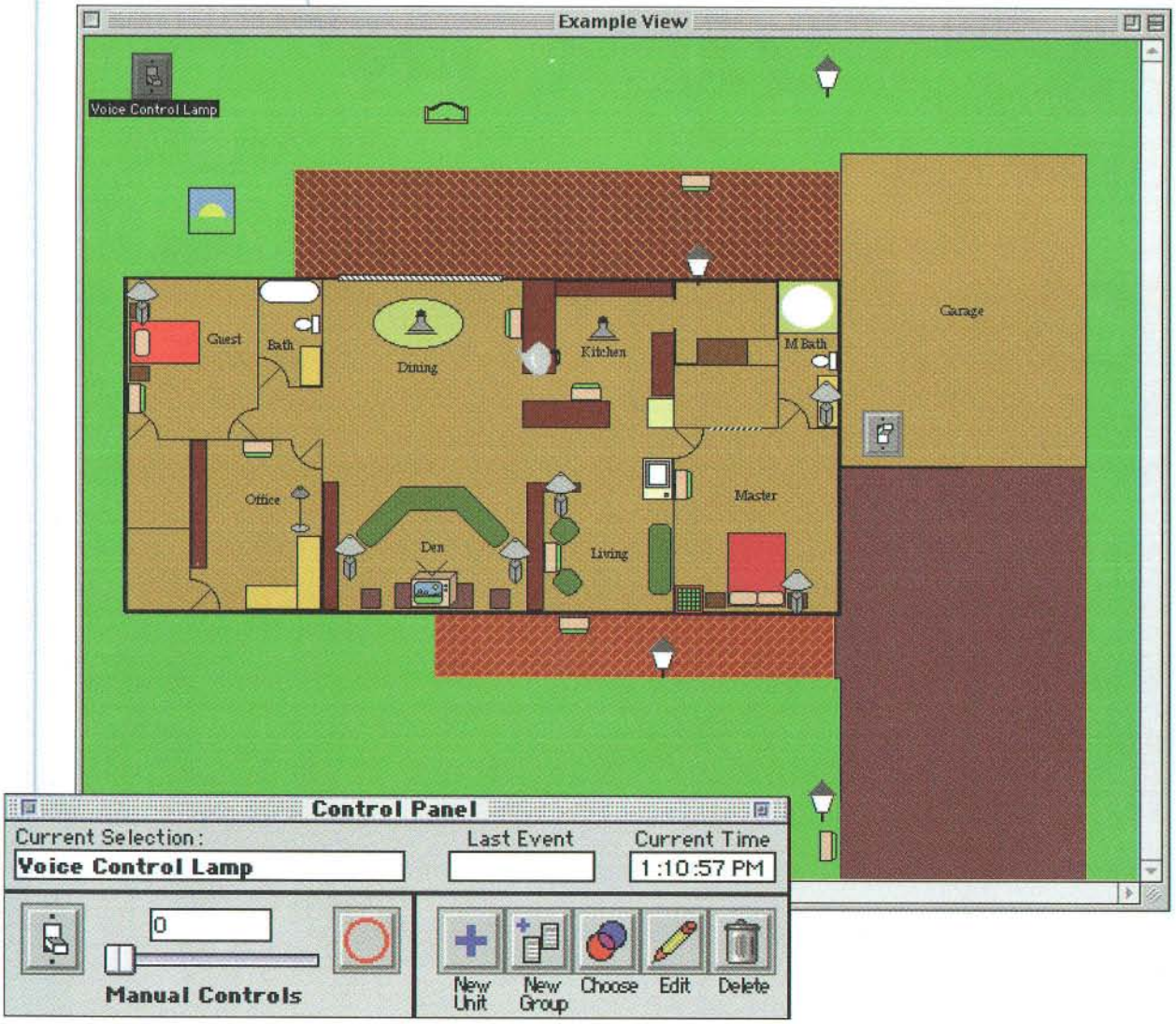




STEP 4 Set up the lamp control in XTension.

Now it's time to tell XTension 2.0 about the lamp module. Choose New Unit from the File menu, and in the dialog box that appears, enter Voice Control Lamp in the Name field. In the Address field, enter A1—the address of the lamp module you set up earlier. Finally, make sure the Dimmable check box is checked—that way, you will be able to dim your lamp. A Switch icon for your new lamp now appears in the Example View window. Select it, and use the switch in the Control Panel window to switch it on and off, and the slider to dim and brighten the lamp. Give it a second or two to react to commands—after all, communication over electrical lines has a *very* slow data rate (slower than the slowest modem out there).





PHASE 2 Make Your Mac Listen

Equipment:

- Speech recognition software
- Wireless audio link receiver, transmitter, and microphone
- Audio cables to connect the audio link receiver to your Mac
- Everything from Phase 1

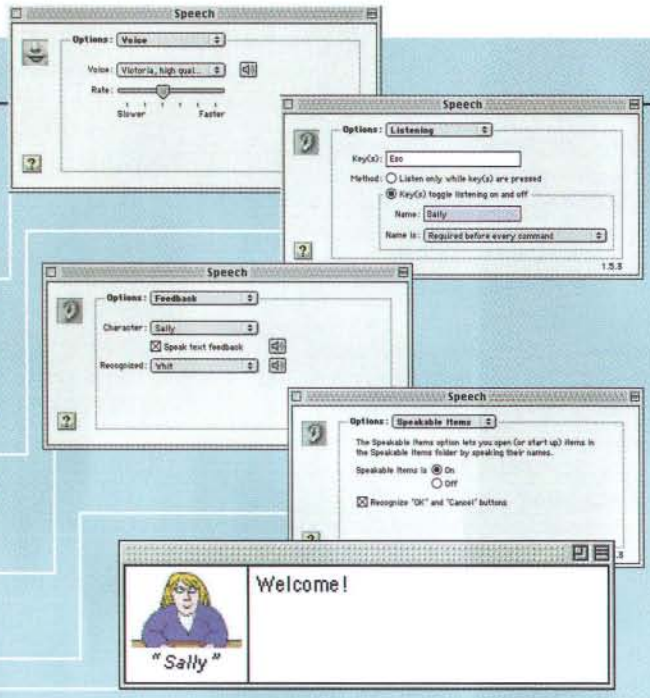
STEP 1 Install Speech Recognition.

Insert The Disc, and install Apple's English Speech Recognition software (unless, of course, you don't speak English, in which case you're out of luck). Restart your Mac after installation, and open the Speech control panel. You'll want to set several options here, so let's start down the list. First, select Voice from the Options pop-up menu, and then select a specific voice for your Mac from the Voice menu. This isn't essential, but pretty soon you'll be thinking of your Mac as a person, so you might as well give it the voice you want.

Next, select Listening from the Options pop-up menu, and then make sure the Key(s) Toggle Listening On And Off option is selected. Type a name for your Mac into the Name field (we named ours Sally), and leave the Name Is selection set to Required Before Every Command.

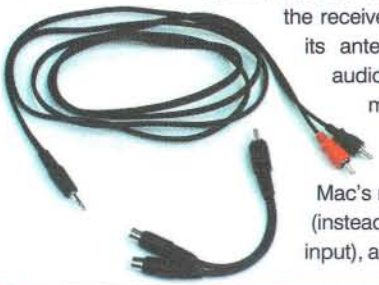
Select Feedback from the Options pop-up menu, and then choose a character from the Character pop-up menu—again, we chose Sally. Leave the Recognized option set as it is. This is the sound your Mac plays to let you know it is carrying out your command.

Finally, select Speakable Items from the Options pop-up menu and make sure the On radio button is selected. Leave the Recognize 'OK' And 'Cancel' Buttons item checked. Your Mac's voice recognition character appears in a floating window.



STEP 2 Set up the wireless microphone.

Unpack the wireless receiver and place it on or near your Mac—we call this the "snuggle" position. Plug in the receiver's power cord, pull up its antenna, and connect its audio output to your Mac's mike port. Contrary to how microphones work in the rest of the world, your Mac's mike port takes line-level input (instead of the much lower mike-level input), and this matches nicely with the line or line out port on the back of most of these devices. Finally, power up the receiver.



Next assemble the wireless microphone transmitter by putting in the batteries (in our case, a 9V battery for the transmitter) and plugging the lavalier microphone into the mike port on the transmitter. Then turn on the mike's power and the transmitter's power, and you're ready to talk to your Mac.

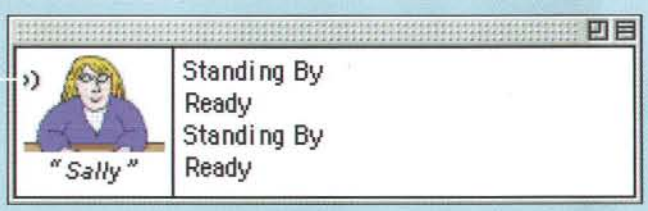
STEP 3 Test the speech recognition.

It's time to test and tweak. Make sure you've turned on Speakable Items in the Speech control panel (see Phase 2, Step 1). Turn the volume on the receiver halfway up, then turn the volume on the transmitter halfway up as well. Clip the microphone to the neckline of your shirt, just below your throat. Press the Escape key and your Mac's character perks up in its floating window, signaling that it's listening to you. The text box next to the character should also read "Ready."

Test your setup by saying, in a normal voice at normal speaking volume, "Tell me a joke." Your Mac should spring into action, saying, "Knock knock." You should answer, "Who's there?" You get the drill—it's a complete knock-knock joke, and you should be able to run through a joke, no sweat. If this all works without a hitch, you're set, but odds are you'll need to change the volume settings on either the microphone or the receiver.

If three curved lines appear to the left of your character's head when you speak, and they hardly ever go back down to two or one, your volume is set too high. Turn it down a bit, and try speaking again until you see a range of one, two, and three curved lines. If, on the other hand, when you speak there are only one or two lines to the left of your character's head, then the volume is too low, and you need to bump it up on the receiver. Turn it up a bit and try again.

Once you get consistent audio results with the joke-telling practice, you're ready to move on to Phase 3—tying it all together with AppleScript.



PHASE 3 Getting It Together

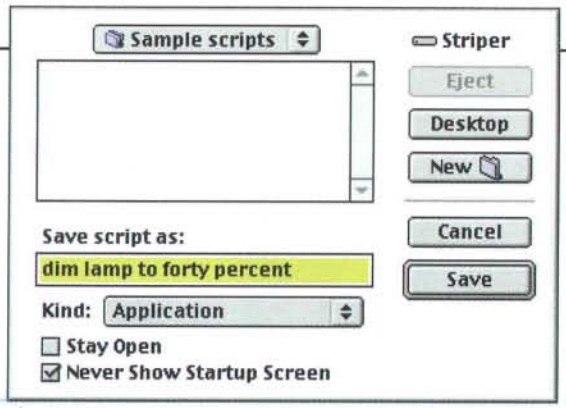
Equipment:

- Script Editor
- Everything from Phase 1 and 2

STEP 1 Write the script.

Fire up the Script Editor, which you'll find in the Apple Extras folder if you're using a recent edition of the Mac OS. You'll see an untitled script window. Enter the following script:

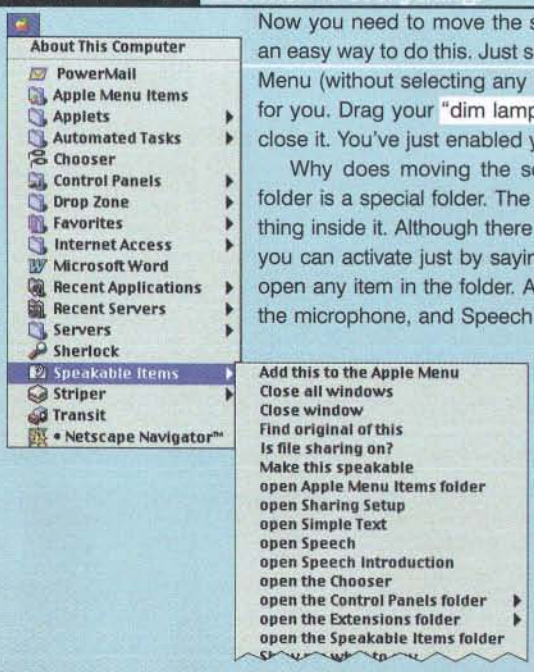
```
tell application "XTension"
        brighten "Voice Control Lamp" to 40
end tell
```



Click the Check Syntax button. The script editor asks you to find XTension 2.0. Locate it in the dialog box. Then save the script with the name "dim lamp to forty percent." Save it as an application, making sure the Stay Open option is unchecked and the Never Show Startup Screen option is checked. In the script editor window, click the Run button. Your voice control lamp should dim to 40 percent.

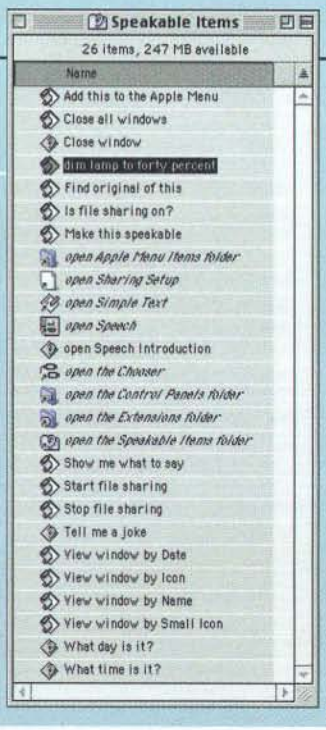
Note: Astute (or picky) readers may note that we used the word *brighten* in the script instead of *dim*. You can use either, as XTension 2.0 treats *brighten* and *dim* as synonyms. So you can call a halt to that letter-writing campaign you just organized. Thank you.

STEP 2 Location is everything.



Now you need to move the script to the Speakable Items folder. There's an easy way to do this. Just select the Speakable Items folder in the Apple Menu (without selecting any items in the submenu) and the folder opens for you. Drag your "dim lamp to forty percent" script into the folder, then close it. You've just enabled your voice control lamp.

Why does moving the script change things? The Speakable Items folder is a special folder. The Speech Recognition software can open anything inside it. Although there are a lot of AppleScripts in here (all of which you can activate just by saying a script's name), Speech Recognition can open any item in the folder. All you have to do is say the item's name into the microphone, and Speech Recognition looks for an item with the same name in the Speakable Items folder. It can be an alias, a folder, or an AppleScript. However, you can't make any voice command longer than 31 characters, since that's the maximum length for file names, so be frugal. Don't go for "Please make the light dim to about 40 percent or so, will you?" because it will never fit as a file name.



STEP 3 Make it so.

It's all led up to this—the moment of truth. With the microphone on and all of the power turned on, stand across the room and say, "Sally, dim lamp to 40 percent." A second or two later, your Mac should carry out your command. To put your system to the test, see how far you can get from your Mac before you exceed your transmitter's range. We have good luck within 100 feet or so—enough to cover most of our house.

It's time to impress your family and friends. Write AppleScripts to dim the lamp to 10 percent, 20 percent, 30 percent, and so on, and scripts to turn the lamp on and off. Put them all in the Speakable Items folder, and you have complete vocal control of your lamp. We've included our sample "dim lamp to 40 percent" AppleScript on The Disc for your perusal.

All of David Reynolds' friends laughed when they heard his idea for this article. In fact, they may have even busted a gut. But who's laughing now?

reviews

We bring you the lowdown on the hard stuff, with apps to go.

FREAKIN' AWESOME
The most valuable products, the coolest gizmos.

SPIFFY
A solid offering. Overall a good investment.

YEAH, WHATEVER
A few good features, but generally a waste of time and money.

BLECH!
We hate to even blotch our pages with the thing.

Blue-and-White G3 Tower

HARDWARE

COMPANY: Apple
CONTACT: 408-996-1010 or 800-795-1000, http://www.apple.com
PRICE: $2,999 (street)
SPECIFICATIONS: 400MHz G3 processor with 1MB of backside cache, 128MB of RAM, 9GB hard drive (7,200-rpm Ultra2 SCSI), two FireWire ports, two USB ports, one ADB port

THE TOWER OF POWER: The new G3 tower has the power to crush the other kids, and it looks stylish in the act.

Photo by Aaron Lauer

Although it looks a bit like an ice cube, Apple's new blue-and-white G3 tower is the hottest piece of hardware around—just be careful about a few gotchas if you're thinking about buying one, or you might get burned. This translucent tower sports an all-new motherboard design, cutting-edge technologies, an easy-access case, and tons of speed. It also has a few shortcomings that could potentially drive you nuts.

The new G3 tower is a joy to set up. As with any Mac you buy, it's just a matter of pulling it out of the box; plugging in the monitor, keyboard, power cord, and peripherals; and powering up. Answer a few basic questions from the Setup Assistant, and you're off and running.

THE BACK OF THE MAC sports some new ports, shown here from top to bottom.

This system is fast—very, very fast. In fact, it's the fastest Mac we've ever used. To test its speed, we ran the standard suite of Norton System Info tests, and the results disappointed us somewhat—according to the Norton suite, a Power Mac 9600 with an XLR8 400MHz G3 upgrade and an Adaptec 2940 U2W Ultra2 SCSI card with an attached Ultra2 SCSI RAID should match or outperform the G3 in all areas except graphics (the new tower's built-in ATI Rage 128 graphics card is a monster). But that's the problem with benchmarks—they rarely translate into real-world performance. So we beat on both the upgraded 9600 and the new G3 with a Photoshop script and a 14.7MB file. We kept settings such as monitor depth, disk cache, and extension sets identical for the two machines, with a couple of exceptions—we enabled the graphics extensions for the ATI Rage 128 on the new G3 tower and the G3 upgrade extension on the 9600.

The new G3 proved to be about 33 percent faster than our upgraded 9600 in real-world tests. That's what the 100MHz system bus on the new G3 gets you—a pipeline twice as big as the 9600's. The Rage 128 graphics card also makes a huge difference, nearly doubling video performance over the 9600's.

The peripherals we tested did fairly well. The USB devices fared the best, as they've had a chance to mature with a push from the iMac. Our USB hubs and SuperDrive worked fine when we plugged them in. FireWire was a bit of a different story, though. We tried

A Monitor to Match

Along with a shiny new G3 tower, Apple sent us a 17-inch Apple Studio Display to check out. It's great to have a matched set, and the blue-and-white Studio Display goes quite nicely with the new G3 tower, thankyouverymuch. The monitor's crisp Trinitron tube is capable of *very* high resolutions—as much as 1600 by 1200 at 60Hz on a stock G3. The tilt-and-swivel stand is great; you can position the monitor easily for optimal viewing. The CRT itself is nearly flat up front (enough to make Columbus uncomfortable), offering a great picture. In toto, it's a sweet monitor for a sweet price ($499), and it looks like an iMac on a tripod. Cool!

Speed Kills

How the Tower Scored

Benchmarks can be deceiving. The Norton System Info tests we performed showed that a Power Mac 9600 with a 400MHz G3 upgrade and 10,000-rpm Ultra2 SCSI RAID should match or outperform the new G3 tower in all areas except graphics. But our tests using Photoshop hinted at a different story, revealing that in real-world practice the new G3 tower is actually likely to be much faster.

NORTON SYSTEM INFO SYSTEM RATINGS

The higher the number, the better the performance.

	9600/233 with 10,000 rpm[1]	9600/233 with 400MHz[2]	G3 with 400MHz[3]	Blue-and-White G3
Overall	422	883	978	988
CPU	477	1117	1131	1057
Video	232	394	686	813
Disk	802	1165	506	696
FPU	575	931	940	931

[1] 9600/233 with 10,000-rpm Ultra2 SCSI RAID
[2] 9600/233 with 400MHz G3 upgrade and 10,000-rpm Ultra2 SCSI RAID
[3] G3 with 400MHz ZIF socket upgrade

PHOTOSHOP BENCHMARKS

AVERAGE TIME TO COMPLETE

The lower the number, the better the performance.

* 9600 with 400MHz G3 upgrade and 10,000-rpm Ultra2 SCSI RAID

capturing video from a Canon digital video camera through Adobe Premiere, but we had some difficulty getting the device to show up properly—a problem with the FireWire drivers or with Premiere. Digital video hobbyists will likely do fine with the stock FireWire drivers, but video professionals will probably want to buy drivers from Digital Origin or another driver vendor. Boy, it's nice to be able to hot swap both USB and FireWire devices!

The beast's design took a while to get used to, but it wasn't long before we grew attached to it. After all, it looks so *different* from any other piece of hardware here—our iMacs included. The handles are incredibly solid, which makes picking up the tower a joy, and the translucent blue plastics are truly impressive—the folks who make this stuff have done an outstanding job. A couple of quibbles about the design: When you open the CD-ROM drive, the beautiful blue plastics reveal a beige drive underneath. This drive just barely pushes open the blue door (which, by the way, blocks the front headphone jack and volume control on the drive). Also, while the easy-open side panel makes for incredibly simple upgrading, it also encourages people to open up your computer while you're using it, and that's mighty distracting. A fix: Secure the case with the convenient locking mechanism on the back.

The machine does have some flaws, though. Its keyboard and mouse are the same as those that ship with the blueberry iMac—hardly adequate for professional use. The keyboard is a bit small for big hands. The function keys are small enough to miss if you're not careful (I kept hitting F11 instead of the Delete key), and the function keys end at F12 (instead of F15). The keyboard also doesn't have some of the cursor keys you'll find on the extended keyboard (such as Forward Delete), and its angle feels a bit odd. However, the keys do have a nice feel to them.

The mouse's perfectly round shape doesn't fit those with larger hands well, and it deprives the user of any orientation reference point. Your best bet is to ditch the keyboard and mouse and plug an extended keyboard and ADB mouse into the G3 tower's ADB port.

Until recently, the new G3 tower lacked a modem. Internal modems have come late to the G3 party, but they've finally arrived. We checked out a Global Village Teleport Internal modem for $139.99 (800-336-2009, http://www.globalvillage.com), and it worked flawlessly. As of this writing, Apple is shipping its own internal modems.

Those who need more than three PCI slots are out of luck—again. Apple insists that the new tower has *four* PCI slots, and technically the company is right. One of the slots, however, must contain a video card—after all, there's no on-board video—so the effective number of free PCI slots will always be three. The work-around is to buy a PCI expansion chassis. Also, only 1-inch-high devices fit in the G3 tower's drive bays, so you're out of luck if you want to put a fat drive in one of those bays. Again, the solution is to make (or buy) an external device bay. That's what makes upgrading an older 9600 pretty attractive—bigger drive bays and more PCI slots.

The new G3 tower is a groundbreaking Mac (although in the scope of PC hardware, its 100MHz bus and Ultra DMA capabilities make it more of a catch-up tower). If you're comfortable on the bleeding edge of technology, this Mac's for you. You'll have to work out a few issues, though. If you're uncomfortable with brand-new technologies, you may want to wait for Apple to iron out the kinks, including isolated incompatibilities, inability to boot from RAID volumes, and floppy installer problems. If you're looking for performance, you owe it to yourself to look at the new towers. They pack a lot of speed at an attractive price.—*David Reynolds*

GOOD NEWS: Speed, speed, speed. Striking design you want to touch. Easy access to internals. Cutting-edge technologies on board.

BAD NEWS: The iMac mouse and keyboard stink. Has only three available PCI slots. Limited internal drive bays.

in review

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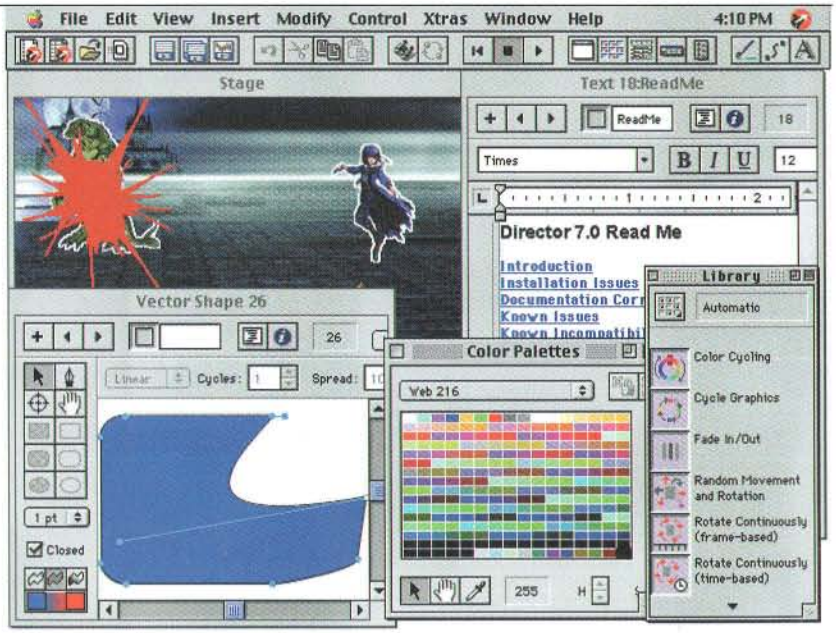
Director 7 Shockwave Internet Studio

MULTIMEDIA

COMPANY: Macromedia
CONTACT: 800-326-2128, http://www.macromedia.com
PRICE: $999 (SRP)
REQUIREMENTS: PowerPC 100MHz or faster, System 7.6.1 or later, 32MB of RAM, 2X CD-ROM drive, 800 by 600 resolution and 8-bit color or better monitor



DIRECTOR 7 SHOCKWAVE INTERNET SUITE incorporates dozens of new features, such as vector shapes, HTML import, and a Web-safe color palette.

With version 7, Macromedia's flagship product, Director, gets a complete overhaul and a new name. The new version focuses tightly on improved Internet functionality and introduces a dramatically improved Shockwave engine. Director's long-time bastion of users who work on CD-ROM and kiosk development will also find a stunning number of improvements that make development much easier.

The *Internet* in Director's new name indicates much more than a rebuilt authoring environment. Macromedia has thrown out most of the applications that comprised Director 6.5 Studio, replacing them with Web-centric applications. Gone from Studio are Macromedia's xRez, Extreme 3D, and SoundEdit 16 2. Replacing these are Macromedia's Fireworks, a Web graphics design application; and Bias's Peak LE, a sound editing application. Most users won't miss either xRez or Extreme 3D too much, but SoundEdit's absence is surprising, as it's been a staple of Macintosh-based multimedia production for years. Also new is Shockwave 7, a rebuilt version of the Internet plug-in for Director files.

Director users have long been clamoring for more Internet-ready features and Lingo. With each successive version through 6.5, Macromedia delivered limited improvements that made Web connectivity easier but not great. Director 7 finally delivers the Internet in a substantial way, providing dozens of new Lingo commands, TCP/IP communication, and support for HTML and HTTPS (the protocol for accessing a secure Web server).

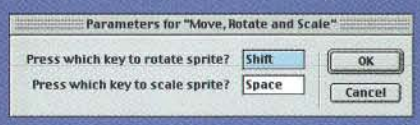
HTML-style hypertext in Director has always been problematic, requiring alternative ways to implement hot text–like transparent sprites or coordinate lists, all less elegant than plain HTML. Director can now import HTML text files, maintaining the HTML formatting and links. This feature alone makes the upgrade worthwhile. Using an HTML document, you can easily import formatted text or include complex hypertext documents in Director projects.

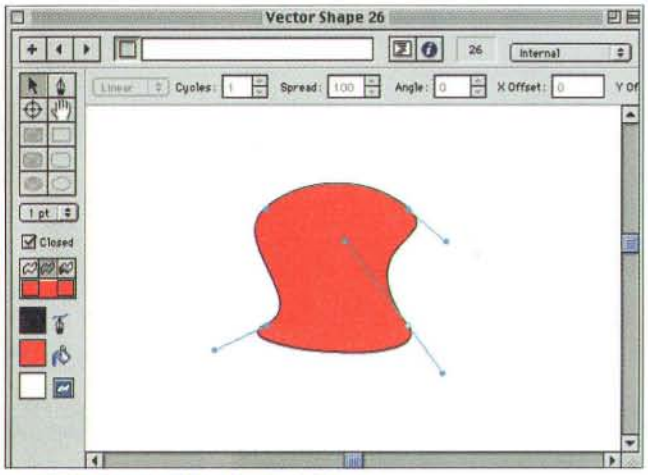
Director's HTML import doesn't work with every HTML tag, however. For example, Director won't recognize image tags. If an imported HTML document includes one, Director generally ignores the tag and the corresponding image. You can write hyperlinks into HTML documents, or you can assign hyperlinks from within Director using the Text Inspector. Like links on a Web page, hyperlinks in Director appear in the color defined for an active link, and the cursor becomes a pointing finger when it passes over a link. You can set a visited link to turn a different, author-defined color after a user clicks it. The

Director 7's Improved Behavior Libraries

In Director 6, Macromedia introduced Behaviors, its version of object-oriented scripting. To use a Behavior, the author would attach it to a sprite and enter some variables to make it specific to that instance. Macromedia's Behavior Libraries improved in version 6.5, but still seemed inelegant and clunky compared to the easy-to-use objects of the now-defunct Quark mTropolis. Director 7's objects still haven't approached that ease of use, but they're vastly improved. A redesigned Library window gives access to all of the Behaviors that come with Director. A pull-down menu lets you switch among different categories such as Navigation, Media, Internet, Java, and Animation. Each Behavior has a unique icon associated with it that provides a graphical clue to its functionality. It's unfortunate that the icons don't show up on a sprite, but newcomers will find these Behaviors and the Library window invaluable as they explore Director.

BEHAVIORS MAKE AUTHORING EASY. By setting a few behavior parameters, beginning users can quickly achieve impressive interactivity.





DIRECTOR'S NEW VECTOR SHAPES TOOL lets you create shapes with Bézier curves and antialias them to any background.

HTML support also extends to content pulled from a live Internet connection, so authors can incorporate updated text information in CD- or kiosk-based projects.

Director 7 incorporates a number of Net-based functions Xtras previously provided. The program now handles TCP/IP communication internally, so it can post text or form data to HTTP servers. Within a Web browser, Director also supports the secure HTTPS protocol for handling sensitive data such as credit card numbers.

Although the Internet is generally considered the hottest game in town, plenty of multimedia authors are still working in higher-bandwidth venues such as CD-ROMs, DVDs, or kiosks. In addition to its vastly improved Web support, Director 7 has an amazing array of new features and improvements that will appeal to both offline and online users.

Perhaps the most robust improvement to Director 7 is the overhaul of the playback engine. Macromedia claims the new engine has been under development for five years, and says projector files are smaller, faster, and more stable than in previous versions. That claim held up over a number of tests. A CD-ROM interface created in Director 6.5 that took 52 seconds to launch took only 28 seconds when we recompiled it in Director 7. Other movie files that we recompiled in Director 7 took anywhere from half the time to only a second or two less to launch. Overall playback also was zippier, with performance gains in nearly every function. Performance improved most on newer systems. Director 7 averaged about 20 percent faster on a 233MHz Power Mac G3, while on a Power Mac 7500 the improvement was closer to 10 percent. This overhauled engine comes at a price. Director no longer supports any 68K Mac, and older Mac systems in the sub-120MHz range tend to run Director rather slowly.

Another improvement to the program is its enriched sprite handling. Director now supports up to 1,000 sprite channels, each one an individual layer that can hold an animated or static element. You can turn off unneeded channels for a boost in playback. Director 7 also offers Lingo control over the layering order of sprites. Using the LocZ Of sprite property, the user can move a sprite forward or backward in layers, revealing or obscuring it. To make a rotating graphic in Director 6.5, you had to create additional graphic elements to make up the frames of animation. You can now realize rotated, flipped, and skewed graphics in software with the new Director engine, because Director 7 and Lingo can control a sprite's geometry by manipulating the points in each of the four corners binding a sprite.

On the graphics front, Director has always supported a wide array of image formats, but in keeping with its Internet focus, it can now import animated GIFs. Director 7 can control the number of play times or animation loops, as well as when the animation plays. The program can also import JPEG- and GIF-formatted files, maintaining their compression—and consequently their smaller size—for Web delivery. To keep file sizes as small as possible, Director has a new vector shape type composed of a series of lines that Bézier handles control, just as in the illustration programs Macromedia FreeHand and Adobe Illustrator. You have to create the vector shapes in Director, but it can antialias them against any background.

The most impressive new graphic capability in Director 7 is support for alpha channels, a feature previously available only through third-party Xtras. An alpha channel is a black-and-white mask that hides or reveals part of an image with shades of gray in varying degrees of transparency. You can import a 32-bit image with an alpha channel created in, say, Adobe Photoshop into Director with its

FIREWORKS IS A WEB GRAPHICS APPLICATION similar to Adobe's ImageReady.

Putting the Studio in the Director

Director Shockwave Internet Studio comes with two new applications longtime Director users won't necessarily find familiar: Macromedia Fireworks and Bias Peak LE. We've reviewed both applications in previous issues. Fireworks received a *Spiffy* in the October '98 issue (p50), and an earlier version of Peak LE received a *Freakin' Awesome* in the July '97 issue (p65).

Fireworks is an image editing program designed to work specifically with Web-destined files. One of its most useful features is the option to do an Export Compare. You can set up a number of export options with different file formats and compression, then compare them for image quality before doing the final export. Peak LE is a sound editing application that replaces the venerable SoundEdit 16 2. Peak offers many of the same features as other sound editing apps, including cutting and pasting, mixing, and digital effects such as normalize and reverse. Peak LE is a light version of the application, and Studio comes with an upgrade offer for the full version.

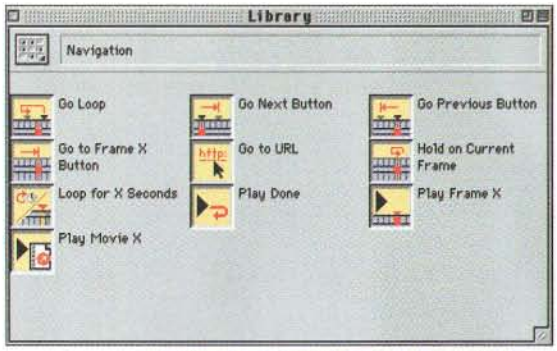
PEAK LE FEATURES A WIDE ARRAY of digital effects and a unique user interface.

mask and transparency intact. You can move the imported graphic around Director's stage and it maintains its transparency, letting you create impressive effects.

Version 7 improves color management as well. Users can now specify a certain color using RGB values chosen from a standard color picker or by entering hexadecimal values in the Sprite Inspector. Director also comes with a Web-safe color palette, to which you can remap sprites for online use.

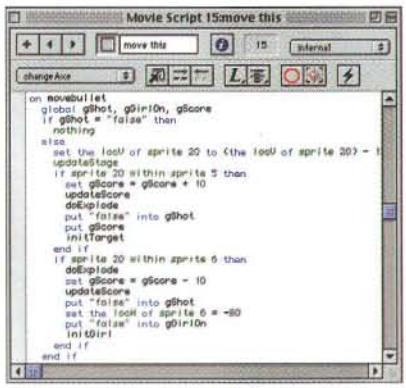
Text handling was previously a problem in Director. You could use either noneditable bitmapped graphics of text or editable rich text, and hope the target machine had the correct font installed. Director 7 has two new text features that should put a smile on developers' faces: embedded fonts and antialiased text at run-time. As a movie plays, Director renders the display font and antialiases it for an improved look. Lingo can change the text on demand while retaining its antialiasing, and text remains antialiased even through a rotation or animation effect.

Authors who want to use a nonstandard font and still take advantage of the new antialiased editable text feature can include the font with the Director movie. By embedding the font, Director stores all the font shape information as a file in the Cast and compresses the font down to around 25K. Text thus looks the same played back on any machine, on any platform—even across the Web.



TO MAKE AUTHORING EASIER, DIRECTOR 7 includes dozens of new behaviors that control navigation, animation, and Internet connectivity.

Another big change is the new structure for Lingo, Director's programming language. Lingo formerly employed a syntax similar to standard grammar. Under the old syntax, the line "set the member of sprite 10 to member 'apple' " would assign a cast member named *apple* to sprite channel 10. Under dot syntax, Lingo's new structure, the line reads "sprite (10).member = member ("apple")." The grammar itself hasn't really changed, and Lingo still understands the old syntax, but dot syntax is somewhat easier to read and understand. Also, Java and Visual Basic use the dot format, and its inclusion lowers the learning curve for those coming from other authoring or programming environments.



SCRIPT COLOR-CODING IS ONE of the new features in Director 7 that will appeal to users unfamiliar with Lingo programming.

Writing scripts is also more intuitive now, thanks to Director's script syntax coloring. Director color-codes different Lingo elements such as variables and handlers for easier recognition. New users will find it very helpful.

Director 7 is surprisingly compatible with projects created under version 6 or 6.5. Of three projects we updated to Director 7 from 6.5, all ran smoothly. The only issues involved differences in text handling due to Director 7's new antialiasing features, or the use of XObjects, an earlier form of Xtras.

Overall, Director 7 Shockwave Internet Studio is one impressive package. The Internet features go a long way toward making Director and Shockwave a viable alternative to Java applets. For non-Internet users, there are enough new features to enhance any multimedia project greatly.—*Rick Sanchez*

GOOD NEWS: A great application bundle. Dozens of new features. Fantastic Internet connectivity.
BAD NEWS: High price. Behaviors still aren't all they could be.

Making Waves with Shockwave 7

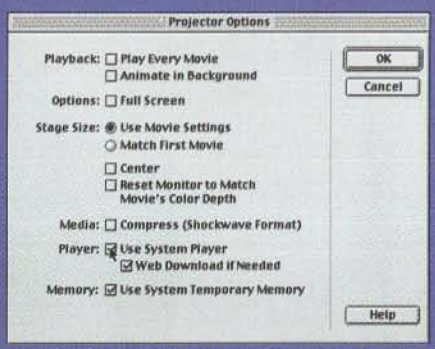
Shockwave started life as a plug-in for Internet browsers, but with version 7 Macromedia has taken Shockwave out of the plug-in folder and put it at the system level.

Initially, Shockwave allowed Netscape Navigator and Microsoft Internet Explorer to play back Director files created for the Web. As Shockwave evolved, it incorporated Macromedia's Flash technology to display vector shapes as well. Shockwave 7 is now a playback engine that installs into the System Folder of the user's machine. Having the engine at the system level makes it accessible to browsers and allows Director authors to create a new kind of movie that uses Shockwave for playback, rather than compiling the engine into the movie itself. Putting the playback files outside the movie file can reduce the movie size by several megabytes. The Shockwave 7 engine download includes the most common Xtras a Shockwave file might need, but if it requires additional Xtras, the original developer can compile them as Shockwave-safe and they can download at playback. The Shockwave engine also periodically checks the Macromedia site for updates and downloads them.

One particularly nice feature for Shockwave developers is a new Preview In Browser function. At any point in a movie's development, you can preview it as a Shockwave file in Navigator or Internet Explorer without actually compiling it. This can save you a considerable amount of time when you're giving a Shockwave movie its final tweaks.

Internet authoring also got easier, thanks to three new Internet-specific behavior libraries. Behaviors are prewritten scripts that only require the user to assign specific variables or actions, such as sprite channel number, frame range, or duration. The Internet behavior libraries cover three areas: handling forms information, streaming media management, and the new Multi-User Server Xtra. The most impressive new behaviors are for the Multi-User Server Xtra. This Xtra allows Director authors to create games and environments in which more than one person can connect. The most obvious examples are Shockwave-driven chat rooms or a multiuser game of Bingo. The Multi-User behaviors make server connections and chat functions much easier than they would be otherwise.

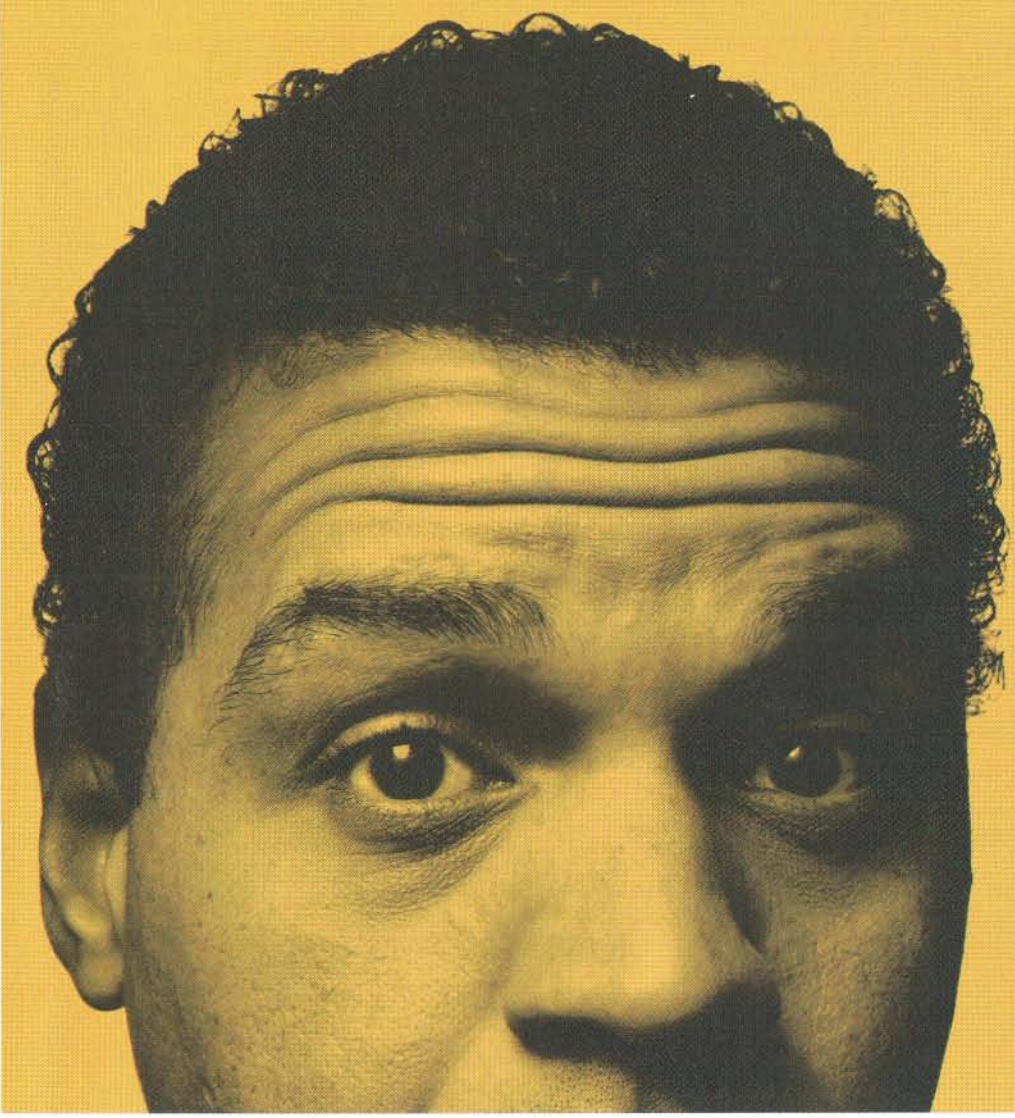
Shockwave 7 moves the dream of a media-rich Internet much closer to reality. With a download-once, update-automatically model, Web users won't have to worry about the burden of constantly upgrading their Shockwave plug-ins.



DIRECTOR MOVIES NO LONGER REQUIRE the compiling of playback files and Xtras into the final project if the end user has the Shockwave 7 engine installed.

CHECK OUT OUR SOFTWARE ON THIS MONTH'S CD!

An Internet provider with great Mac support? Now that's thinking different.



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reviews

Game Wizard

HARDWARE

COMPANY: Micro Conversions
CONTACT: 877-986-4276, http://www.microconversions.com
PRICE: $199 (SRP)
REQUIREMENTS: Power Mac or revision A or B iMac, one free 12-inch PCI slot or mezzanine slot

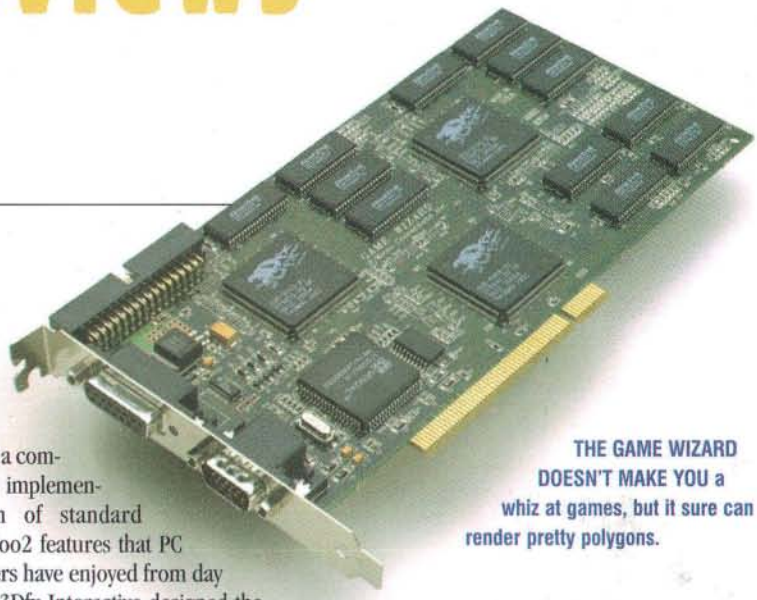

Photo by Aaron Lauer

THE GAME WIZARD DOESN'T MAKE YOU a whiz at games, but it sure can render pretty polygons.

Mac games have made a comeback, and 3D-acceleration hardware has taken off like never before. Between Voodoo Graphics, Voodoo Banshee, Voodoo2, Rage Pro, Rage 128, Glide, RAVE, and OpenGL, newbies and casual gamers could go mad with all the choices. Add to the list terms like trilinear filtering, LOD biasing, and MIP mapping, and you could just scream with frustration. Game players want to see 3D games in action, not deal with a bunch of jargon. For awesome 3D acceleration, a Voodoo2 card is one of your best options.

The only original design manufacturer that has brought Voodoo2 to the Mac is Micro Conversions. Its aptly named card, the Game Wizard, houses the Voodoo2 chip set and sports 12MB of video memory. Voodoo2 works superbly, and it kicks polygons at an 800 by 600 resolution. Its outstanding performance and support for features such as single-pass multitexturing are a credit to 3Dfx Interactive, its developer.

The Game Wizard's design is similar to most reference designs found on Voodoo2 boards for the PC; however, this one lacks a complete implementation of standard Voodoo2 features that PC gamers have enjoyed from day one. 3Dfx Interactive designed the Voodoo2 chip set to support scanline interleave (SLI). This means that you can hook together two Voodoo2 cards, doubling the pixel fill rate, and play games such as Unreal at 1,024 by 768 resolution with no drop in frame rate or game speed. Unfortunately, at the time of our evaluation the promised control panel for SLI mode was absent. So far we've seen SLI fully functioning only on PCs.

Adding to the inconvenience, the Game Wizard's RAVE driver was still in beta during our testing. Although most 3D games for the Mac come in both Glide and RAVE versions, a few RAVE-only titles, such as Nanosaur and Dark Vengeance, can't run without a RAVE driver. We couldn't get Dark Vengeance to run with the Game Wizard's RAVE driver. Micro Conversions is working on a final version of the driver that we hope will eliminate incompatibilities.

In light of these shortcomings, you're probably wondering whether the Game Wizard deserves the hype usually associated with the Voodoo brand. For 3D action gaming, it's still the best add-in solution. Glide games typically run a little better and feature more-dynamic lighting effects than their RAVE counterparts. Until developers optimize RAVE versions of games for Rage 128, Voodoo2 has a slight edge—and 3Dfx Interactive will be releasing Voodoo3 very soon. The latest update of Glide Unreal added support for multitexturing, with a speed increase of around 10 to 15 percent on a 266MHz Power Mac G3. We felt the improvement. With Rage 128 and Voodoo Banshee coming out on add-in boards soon, the gap is narrowing, though. Be sure to look for our comparative benchmarks in upcoming issues.

Chip makers generally develop graphics accelerators for two years and sell them for only six months, so Voodoo2 has enjoyed a good life span. The Game Wizard makes Unreal and Myth II look spectacular at 640 by 480 and sublime at 800 by 600. And with PC games moving close to mandatory hardware acceleration, the Game Wizard has a place in your gaming Mac. But remember that any CPU less than a 250MHz 604e or G3 won't saturate the Voodoo2 chip set. And no matter what, a graphics accelerator can't speed up a machine's CPU, disk operations, or bus speed.—*Jennifer Ho*

Voodoo2 for iMac

As a gaming machine, the iMac is pretty good. It plays the vast majority of games wonderfully. But some folks are never satisfied and lament the iMac's lack of the hard-core 3D acceleration that the Voodoo2 and Rage 128 chip sets offer. Now, however, Micro Conversions has come out with a $199 Game Wizard for the iMac. The 8MB card fits into the mezzanine slot on revision A and B Bondi blue iMacs.

THE IMAC GAME WIZARD SITS UNDER the motherboard and churns out games like Unreal in their full glory.

Obviously, installing this Game Wizard is much more complicated than plopping a video card into a desktop computer's PCI slot, so reading the manual is essential—we can't stress that enough. The only drawback to the iMac Game Wizard is that the five new color iMacs released in January don't have a mezzanine slot; therefore, adopters of these Macs are stuck with the older, slower Rage Pro. If you're interested in 3D gaming, you're best off purchasing a pro-line G3.

GOOD NEWS: Does both Glide and RAVE. Excellent visual quality. Nice color saturation. Supports single-pass multitexturing. BAD NEWS: RAVE driver isn't final. No SLI as promised. Costs $100 more than Voodoo2 cards for the PC.

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Quest for Glory V: Dragon Fire

FUN & GAMES

COMPANY: SierraFX
CONTACT: 800-757-7707, http://www.qg5.com
PRICE: $54.95 (SRP)
REQUIREMENTS: 120MHz PowerPC (180MHz PowerPC recommended), System 7.5 or later, 32MB of RAM, 350MB of free hard disk space, 6X CD-ROM drive, 16-bit color display

FIND A DEMO of Quest for Glory V on The Disc.

DEFEATING FEARSOME CREATURES is the stuff heroes are made of. Prove you have the mettle to be the next king of Silmaria.

Decent adventure games have become a rare commodity in the past few years. Too often, flashy, full-motion video or obscure, mind-numbing puzzles have gotten in the way of developing and exploring expansive stories. SierraFX has changed that trend with Quest for Glory V, now in simultaneous Mac and PC release. It takes up the mantle of high-quality adventure gaming.

The fifth installment in a series (some earlier installments were PC only), Quest for Glory V spins an engaging story into a rich narrative tapestry. Your old friend, the wizard Fenris, has summoned you to the island of Marete to help unravel the web of deception surrounding recent raids and the king's assassination. You must compete for the throne by entering the Rites of Rulership, a long series of contests, while avoiding the assassin's poisoned blade. Quests take you from the lively city of Silmaria to the mythical worlds of Atlantis and Hades.

A QUICK DANCE IN THE DRYADS' GLADE is worth more than a song.

Quest for Glory V's gameplay is a mix of adventure and role-playing genres, combining quests and puzzle-solving with such RPG staples as the four character classes (Warrior, Wizard, Thief, and Paladin), combat, and numerical character stats. The difficulty setting allows you to set the challenge of combat and puzzles to match your own playing style.

Intuitive puzzles flesh out the story and put your noggin through its paces. You can converse interactively with a colorful cast of characters; the voice acting is as fresh and entertaining as the script is humorous.

Quest for Glory V's lush world draws you into the island calm and magical terrors of Silmaria. The engine delivers the smoothest scrolling panoramas we've seen, with minimal dithering, but it doesn't support hardware acceleration, which would have enhanced the visuals. The 3D figures are cleverly animated and scale realistically to merge with the scrolling backdrops. The delightful soundtrack can lull you into the exotic locale's tranquility or drive you into the clash of battle.

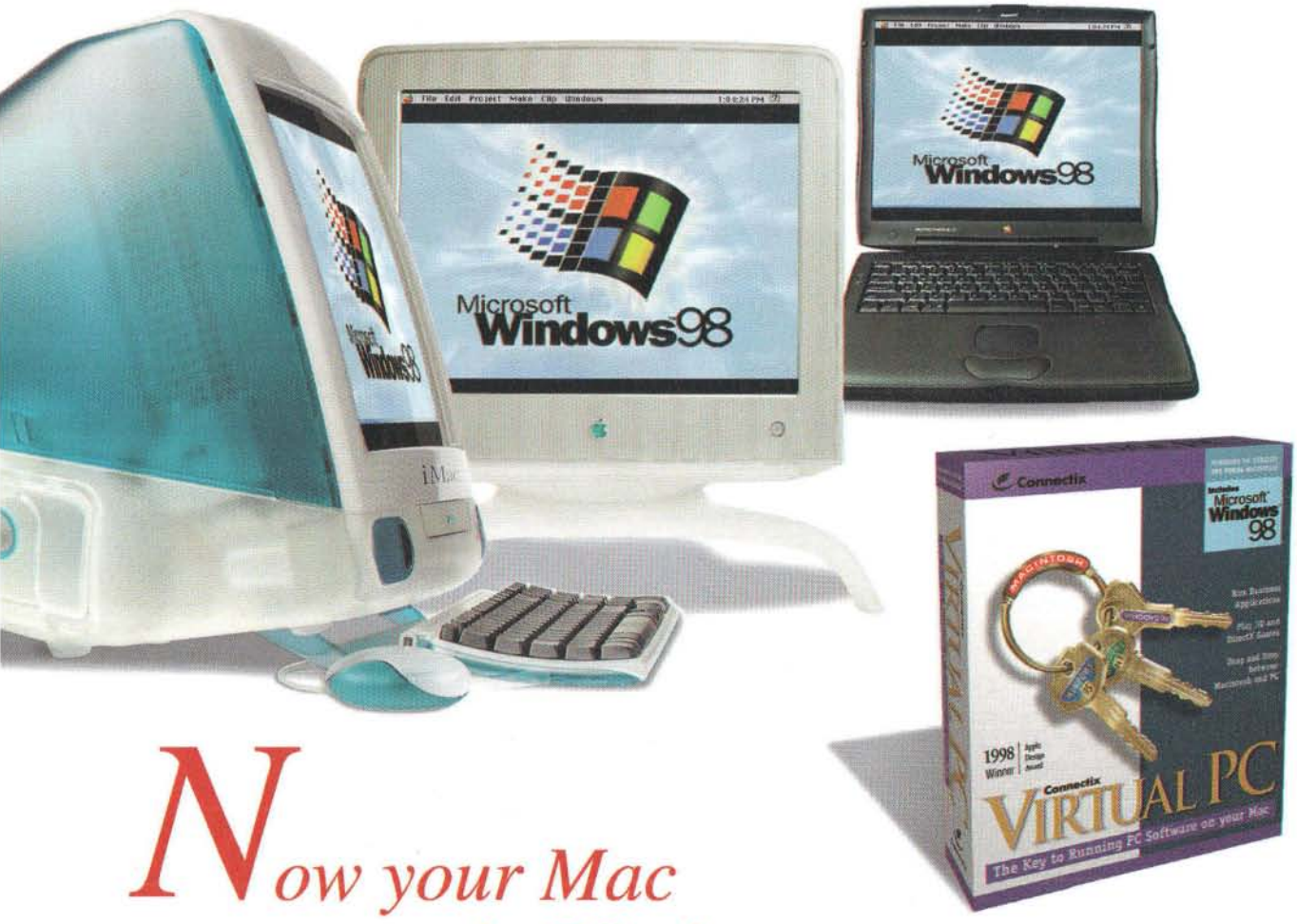
You move through the game and interact with objects and people using simple mouse-clicks. But throwing objects, casting spells, and engaging in 3D combat require more-complicated key commands, and the polygonal figures projected against 2D backdrops can make it difficult to judge whether a target is in front of or behind you. Also, the lack of zooming means Quest for Glory's fighting figures can look tiny on large backgrounds. On the other hand, key items and hot spots are consistently well drawn and obvious enough to prevent the "click everywhere" syndrome common in adventure games.

If you get stuck, SierraFX provides an online forum to ensure you don't become permanently blocked. Beware of spoilers who reveal all the answers, and remember that most of the fun comes from discovering solutions to the side adventures. Quest for Glory V is an awesome epic.—*Samuel Parker*

THE BUSTLING MARKET OF SILMARIA gives charm and personality to the exotic island locale.

GOOD NEWS: Outstanding panoramic landscapes and city scenes. Enchanting musical score. Intuitive puzzles. Four character classes, each with unique quests. Great replayability.
BAD NEWS: 3D combat is tricky. No hardware-acceleration support.

Sometimes *faking it* is better than the real thing



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BBEdit 5.0.1

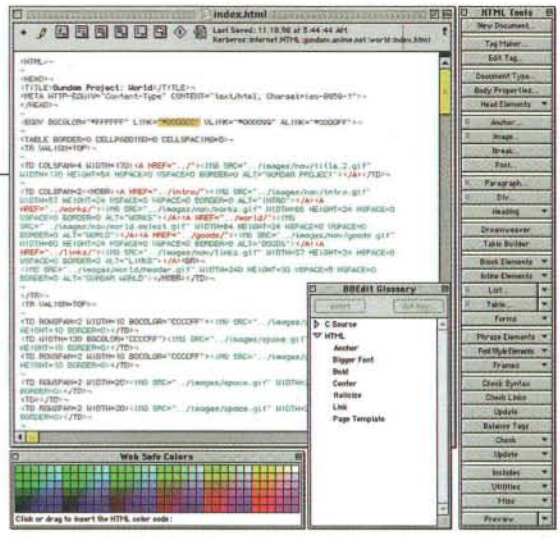
PRODUCTIVITY

COMPANY: Bare Bones Software
CONTACT: 781-687-0700, http://www.barebones.com
PRICE: $119 (SRP), $39 upgrade, $79 competitive upgrade
REQUIREMENTS: System 7.0 or later (System 7.5 recommended), 1.2MB of available RAM, CD-ROM drive

FIND BBEDIT LITE 4.1 on The Disc.

During its decade-long lifespan, BBEdit has evolved from a stripped-down text editor aimed at programmers to a popular HTML authoring tool.

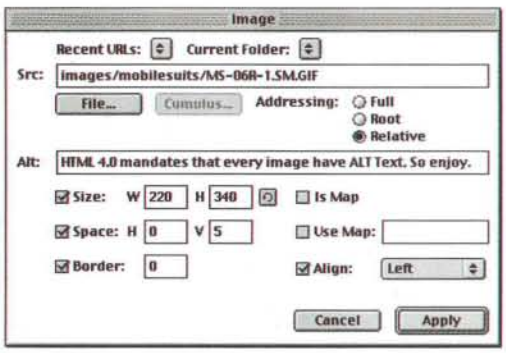
Though BBEdit's interface centers around a simple text field devoid of graphics and styled text, the program that surrounds this minimalist swath of monospaced type is packed with goodies.



ITS MAIN WINDOW MAY BE MINIMALIST, but BBEdit's HTML-authoring palettes add a lot of single-click power. The pop-up menus at the top of the window are darn handy, too.

The app's original killer feature was its lightning-fast multifile search-and-replace faculty, which supports programmable grep searches. When combined with zippy performance, unlimited file sizes, comprehensive scripting support, and a bevy of text-twiddling and text-analyzing commands, BBEdit's searching power made the program an unexpected cult favorite of tag-tweaking HTML hackers. The last couple of revisions have focused on beefing up its suite of bundled HTML tools to keep up with the needs of this new clientele of Web authoring professionals.

The latest changes may seem modest, but they significantly improve the lot of the HTML scribe. The HTML tools have been relocated to a nicely organized Markup menu that provides a workable alternative to the floating palette. The syntax checker is much stricter, enforcing the etiquette conventions of the HTML 4.0 spec. Context-sensitive Tag Maker and Edit Tag tools offer time-saving shortcuts, and customizable formatting features cater to those of us who are very particular about the appearance of our code. While the improved Glossary palette and the ability to assign custom Command-key shortcuts to any command are of general interest, version 5.0 clearly aims to please Web authors.



THE NEW EDIT TAG COMMAND brings up a dialog box appropriate to the tag you're currently working on, putting every weird HTML attribute at your fingertips.

Although BBEdit deserves its reputation as a great HTML tool, it's not an all-purpose Web authoring solution. Novices will benefit from graphical features that hide the complexities of raw HTML, but Web professionals will likely need additional tools for flashy stuff like JavaScript, Dynamic HTML, multimedia, and display graphics—areas where BBEdit's tools don't venture. The expert Web authors most likely to appreciate BBEdit's swift and elegant HTML-hacking capabilities will also need a high-end graphical program, such as GoLive CyberStudio (Adobe now owns GoLive) or Macromedia's Dreamweaver (which includes BBEdit), for these tasks.

When used in concert with a first-class graphical Web page editor, BBEdit finds its natural niche as a code-level tweaker and, thanks to its search-and-replace powers, templates, and updatable "includes" commands, an efficient site-management tool.—*Mark Simmons*

THIS MATCHES A SEQUENCE OF TEXT that starts with <I>—the HTML italic tag—and ends with its complement, </I>. In the middle go any number of characters, provided they're not angle brackets. The parentheses around the middle expression allow you to store it for use in the replacement text.

A SET OF <B> and </B> tags will replace the found text, with the previously stored characters between them.

BBEDIT'S LIGHTNING-FAST MULTI-FILE SEARCH features let you make this change to a thousand pages just as easily as you would to one.

IF THIS ISN'T CHECKED, BBEdit performs a simple grep-free search and replace.

YOU CAN STORE GREP PATTERNS for later reuse. This pop-up menu lists stored patterns.

MASTERING THE UNIX-DERIVED SEARCH-AND-REPLACE LANGUAGE that gives BBEdit its text-munging muscle requires hours of study and practice. If you're not sure it's worth your while, ogle this power-packed sample, a teensy snippet that turns italicized HTML text into boldface. Remember, these grep features work just fine with the free BBEdit Lite.

GOOD NEWS: Laborsaving, well-organized HTML tools. Powerful templates and "includes" commands allow sitewide updates. Grep searching still rocks. BAD NEWS: Won't help you work with JavaScript, style sheets, Dynamic HTML, and other Web design trends. Table Builder still needs work. Doesn't eliminate need for graphical editor.

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reviews

MD-5000

HARDWARE

COMPANY: Alps Electric
CONTACT: 408-432-6434, http://www.alpsusa.com
PRICE: $649 (street)
REQUIREMENTS: System 7.01 or later (8.1 or later for USB), SCSI interface (USB adapter kit sold separately)

Photo by Aaron Lauer

ALPS' RIBBON-BASED MD-5000 PRINTER OFFERS a lot of unique features, but it can't compete with today's inkjets.

Alps is really doing its part to render dots-per-inch ratings useless. The company's latest printer, the MD-5000, boasts a mouthwatering 2,400-dpi resolution—but what does this mean in terms of image quality? Nothing. The $649 ribbon-based MD-5000 produces a far lower-quality image than any of Epson's Stylus Photo line of 1,440-dpi inkjet printers. The Stylus Photos print more cleanly, show fewer dots, and produce smoother color gradients. They are also faster, quieter, and priced up to $325 less.

After coming to this sad realization, we asked ourselves why, if its ultrahigh dpi rating doesn't equal a top-notch image, anyone would opt for the pricey MD-5000. Well, there are actually several reasons, none of which are dpi related and most of which stem from the fact that the MD-5000 (like all of the Alps MD line) uses a heat-based ribbon technology instead of an inkjet cartridge.

These ribbons lay down a smudge-proof, waterproof print that doesn't soak into the paper the way an inkjet's ink does. With the MD-5000, you can print on both sides of even the thinnest paper, and the print will not fade or smear. Also, this ribbon-based technology gives the MD-5000 the ability to print spot colors and use a variety of ribbon combinations. Among the ribbon options you can get for the MD-5000 are metallic colors and foils, white, and a finish overcoat that makes even the cheapest paper look glossy. Such additions can result in attention-getting textures that are well beyond the capabilities of standard inkjet printers. The MD-5000 also lets you spot-print plain colors several times to emboss a print slightly.

These ribbons, combined with the MD-5000's ability to use almost any paper stock, offer versatility you previously could get only by paying a professional print shop like Kinko's. And to top it off, the ribbons for the MD-5000 cost only $6 to $7—much less than the $25 to $30 typically charged for color inkjet cartridges.

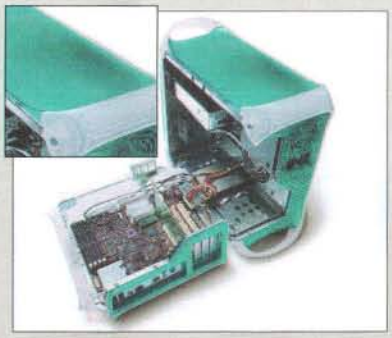
But here's where the MD-5000's unique advantages end. The downside, as we've already mentioned, is its price and inferior image quality. To make matters worse, the MD-5000 is very slow. Like all the models in the line, the MD-5000 prints one ribbon at a time: It prints a color, sucks the paper back in, and adds the next color, until it has laid down all four colors. This noisy process seems to take forever.

In fairness to Alps, we should note that the company does not market its printers to compete with inkjets for everyday home and office use. It also doesn't intend the MD-5000 for use as a photo printer, even though it offers a dye-sublimation add-on kit that gives you perfect photo prints. Alps is targeting people who want a versatile product for making low print runs of letterhead, flyers, and business cards, as well as other uses suitable for a small print shop.

All things considered, we still think that the high output quality of today's inkjets makes them a better choice even for flyers, business cards, and letterhead. Even though you can't print metallics and foils with an inkjet, your colors will be much more solid, your gradients much smoother, and your wallet much fatter. Given all of the MD-5000's bells and whistles, we'd like to buy into Alps' "home print shop" angle, but the print quality just isn't there. For now, we'll stand by our inkjets.—*Robert Capps*

Print Preview

An Epson Stylus Photo EX printer churned out this great print of the new Power Mac G3 onto photo paper.



Even at 2,400 dpi, the MD-5000's print quality is inferior to that of the Stylus Photo inkjets. Note the gradients in blue at the top of the tower.

GOOD NEWS: Double-sided printing even on thin paper. Spot color-foil, color-metallic, and white printing. Can be used with almost any paper stock, including thick and very thin paper. Print won't fade or smear. Gloss-overcoat option for non-glossy paper. Low-cost ink-ribbon replacements.
BAD NEWS: Expensive. Print quality is not as good as that of Epson's cheaper Stylus Photo inkjets. Very slow. Grainy text and images. Visible ribbon lines in high-quality mode. Mac version costs $50 more than PC version.

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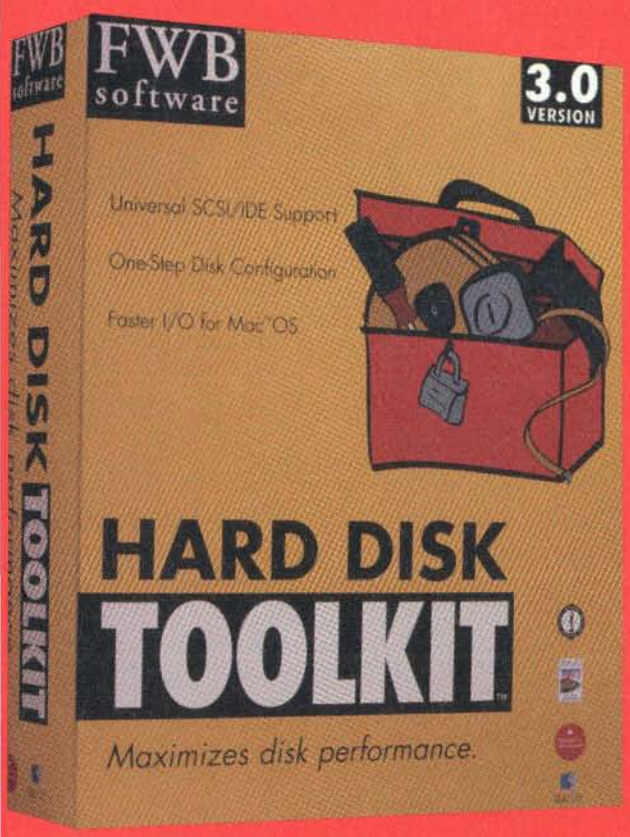

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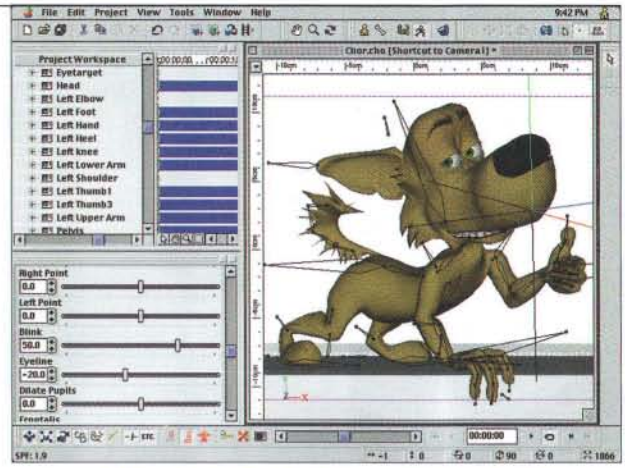
Animation:Master 99 (version 7)

DESIGN & GRAPHICS

COMPANY: Hash
CONTACT: 360-750-0042, http://www.hash.com
PRICE: $199 (SRP)
REQUIREMENTS: 200MHz PowerPC, System 7.5 or later, 64MB of RAM, CD-ROM drive
RECOMMENDED: Power Mac G3, 128MB or more of RAM



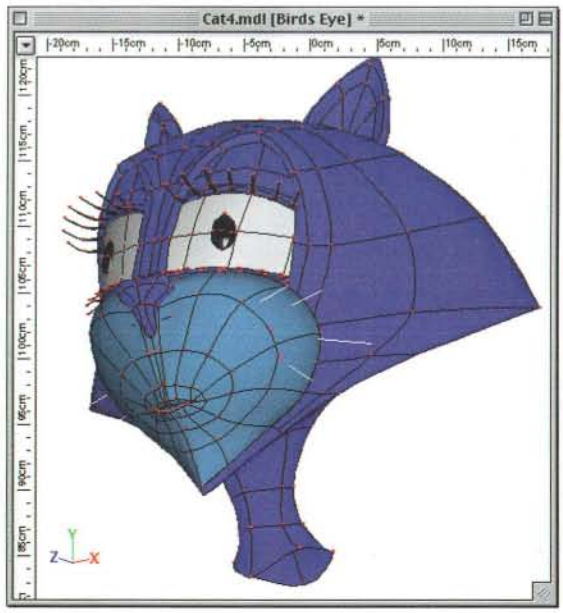
CHARACTER ANIMATION IS EASY with Animation:Master 99's new interface design. Pose Sliders can link any number of animatable attributes to a single control.

In our last review of Animation:Master, popularly called "Hash" after its creator Martin Hash, we pegged the application as the best available for character animation on the Mac. Animation:Master 99, also known as version 7, is the newest iteration of this venerable program, and it's still top dog. Not only does Animation:Master 99 handle character creation and animation with an elegance that few products on any platform (including SGI) can match, but its development cycle proceeds at a pace approaching light speed. There have been two major releases of Animation:Master since we last reviewed it in these pages, and a third may be out by the time you read this. Remarkably, at $199 Animation:Master 99 is also one of the least expensive 3D animation programs on the market.

Animation:Master 99 is extremely complex and full featured. It retains and improves on the main advantages of earlier versions—the simple spline modeling tools and the powerful boning system. The new version's animation interface looks stripped-down but is fast and intuitive, with any keyframe or motion graph available instantly. The fast shaded playback gives a good idea of a character's motion without requiring a time-consuming test render.

Among the numerous interface enhancements is the Mouse Motion Capture tool. It allows you to manipulate a character's motion as the animation plays, rather than resorting to traditional keyframe methods. Another addition is Smart Skin, a new joint-deformation method that can link any number of point displacements to the rotation of a bone, making complicated muscle-bulging and flexing motions much easier to create. And the new Pose Sliders tool can link just about any combination of animatable attributes to an easy-to-use slider that adjusts all of them at once. It's now possible to blend or add separately created Actions (animation sequences) in complex ways, or to create an automatic transition between two separately saved Actions (although you still can't reuse Actions created in one Choreography in another). New constraints and inverse kinematics (IK) solvers also improve on what was already an amazingly good IK interface, rivaling those of programs that cost thousands of dollars more.

The most important addition to the program's spline-modeling tools is the five-point patch, which makes it easier to construct geometrically difficult regions, such as the area where the arm and shoulder join. Animation:Master 99 can also lock down any part of an object so that it remains visible but can't be manipulated. You can now import DXF models and convert the polygonal for-



ANIMATION:MASTER 99 NOW INCLUDES HAIR PARTICLES, as seen on the face of this cartoon cat.

Coming Up Next...

Animation:Master 99 has the fastest development cycle of any 3D program we've ever seen. The next update, Animation:Master 99 (version 7.1), will be out before you read this, and version 7.2 will arrive soon after. Here are some of the new features that Hash plans to include.

Save Choreography as Action: This will allow you to turn a Choreography (an animated scene) into a reusable Action to be applied elsewhere. It should result in a much better animation workflow.

Compensating Constraint Offsets: These will help characters perform actions such as picking up objects. With the new tools, an object can be transferred in and out of a character's grasp with a single click.

Network Rendering: Animation:Master has had a network renderer for the PC for some time. Version 7.2 will bring that ability to the Mac.

OpenGL Hardware Acceleration: Animation:Master uses OpenGL as its real-time rendering engine, but it doesn't support OpenGL hardware acceleration. This limitation will be fixed in a forthcoming release, just in time for the arrival of new OpenGL cards.

WE CREATED SIDNEY THE DEMON'S complex anatomy and muscular structure with Animation: Master 99's spline-based modeler and new five-point patches.

mat to Hash splines; however, this works best with DXFs containing four-cornered polygons rather than the three-cornered ones generated by many other 3D modeling programs. And Animation:Master 99 still lacks lattice deformation, lofted objects, skinning, magnetism, and other high-level modeling tools for moving lots of control points with minimal tedium.

Texturing and particle tools have been given an overhaul, too. New texture-mapping methods—Projection Maps and Patch Images—make mapping certain types of surfaces much easier. You can cover a creature with hair particles that animate automatically in an accurate way based on its movement. A new antialiasing method, as well as tools that simulate the characteristic effect of real film or field rendering, yield much-improved final images. Too bad the Motion Blur tool operates only within a character's area and does not smear onto the background, as it would appear to do in reality. Postprocessing workarounds in After Effects are still necessary to blur fast-moving objects realistically.

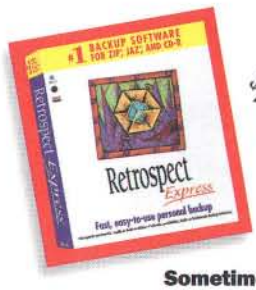
Desktop-based 3D animation apps are among the most difficult programs to master. Without timely and generous tech support, getting past the many technical hurdles can be nearly impossible. In this area, Hash truly excels. The company provides top-notch free support and maintains the sort of extremely personal relationship with its customers that is very rare today. Hash fixes bugs promptly, posts new patches as often as every three days, and releases beta software freely to all users. This responsiveness is all the more surprising given Animation:Master 99's low price.

Serious character animation requires the kind of sophisticated tools that, on the Mac, you'll find only in Animation:Master 99. If character animation is what you do, this is the app to have.—*Raf Anzovin*

GOOD NEWS: Best Mac app available for character animation. Smart Skin, Pose Sliders, and five-point patches. New tools for layering Actions. Excellent tech support and rapid bug fixes. Ludicrously low price. BAD NEWS: No hardware OpenGL acceleration. You can't reuse Actions created in Choreography windows. Motion blur operates only within a character's outline.

★ Ranked TOP 1% of 1998 Software Reviewed ★

Macworld



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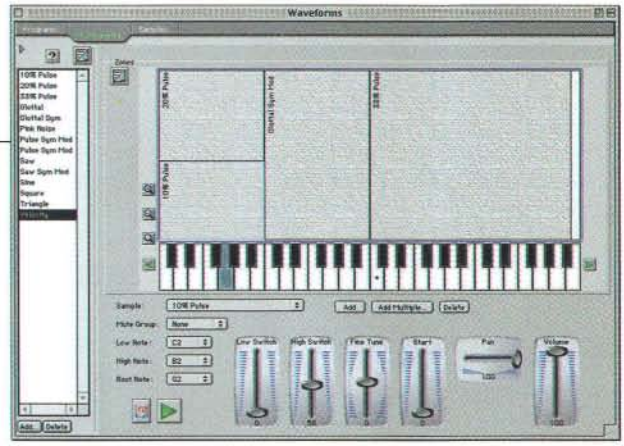
Unity DS-1 1.1.0

AUDIO

COMPANY: BitHeadz
CONTACT: 831-465-9898, http://www.bitheadz.com
PRICE: $449 (SRP)
REQUIREMENTS: 120MHz PowerPC or faster, System 7.6.1 or later (8.x recommended), 32MB of RAM (64MB or more recommended), 50MB of free hard disk space, CD-ROM drive, monitor with 800 by 600 resolution or higher

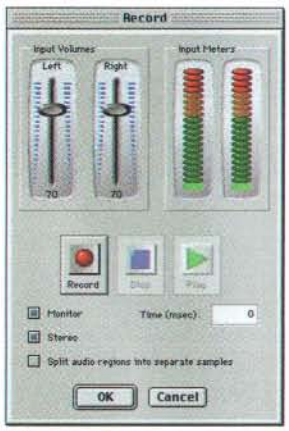


ARRANGE THE SAMPLES ON THE KEYBOARD. Notice that the 10% and 20% Pulse samples share the same range of notes. Velocity (how fast you strike a key) determines which of the sounds you hear.

FIND A DEMO of Unity DS-1 1.04 on The Disc.

Unity DS-1, BitHeadz' set of sampling and related software applications, turns your Mac into a state-of-the-art sampler, sound editor, synthesizer, and patch librarian at a fraction of what a hardware sampler costs. This killer app offers more than most samplers, and you can totally customize it for your specific needs.

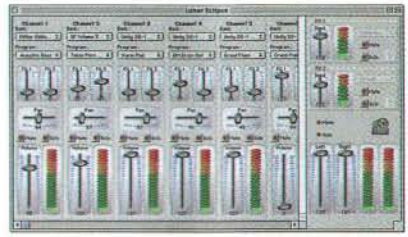
Gigging musicians, bring your PowerBook and a MIDI keyboard to a job, and realize all the sounds and expression you've dreamed of. Take control of all the MIDI parameters live. Route a program's filter resonance to the mod wheel, changing the timbre of a sound as you play. Layer up to 128 notes on a single key, and let the velocity of your playing determine which sound is heard. Select one of Unity DS-1's global velocity tables to suit your touch. Express your creative brilliance on all 16 available MIDI channels.



RECORD SOUNDS into Unity DS-1 using Sound Manager, an ASIO-compatible sound card, or Digidesign's Direct IO.

Composers and studio engineers will appreciate the pro-quality, 48KHz, 24-bit sound; the ability to see Unity DS-1 program names within OMS-compatible sequencers; the utility that makes DS-1 files recognizable to PCs; and the 16-track mixer. Each mixer channel has its own automated settings for bank and program selection, volume, pan, mute, solo, and global effects. And integrating DS-1 into existing MIDI setups using OMS, FreeMIDI, or Sound Manager is easy.

A well-designed sound editor with digital signal processing and a great synthesizer engine that can use multisamples as oscillators should make any sound designer ecstatic. You can use AIFF, WAV, SD I or II, and CD audio files. Unity DS-1 also imports and maps Akai S1000 and S3000, DLS, Sound Font 2.0, and Sample Cell I and II instruments automatically. You can organize sounds into custom banks and programs for easy MIDI playback from a keyboard or sequencer, and record anything you play from a sequencer or the MIDI Processor to your hard drive as a sound file.



MIX UP TO 16 CHANNELS OF MIDI from different banks in Unity DS-1's mixer application.

Even if you aren't a professional musician, you'll experience the fun of sampling a sound and tweaking it into something expressive, all at an affordable price. You don't even need an external keyboard to play it back: The package's Keyboard software does that. Let the great-sounding GM bank play back your MIDI files using the supplied QuickTime driver, and give your game playing and Web browsing a sonic boost.

Getting started in Unity DS-1 can be confusing, but the detailed and helpful PDF manual explains everything. Full AppleGuide help is also available in the Editor.

With Retro AS-1 (see *Reviews*, Jan/99, p52) and Unity DS-1, BitHeadz makes it possible to put a pro-quality music studio on your Mac. It's an awesome accomplishment and an absolute blast.—*Judy Munsen*

GOOD NEWS: Full-featured software sampler and sound editor package. 250MB of high-quality sounds. Customizable configuration. Great price.
BAD NEWS: Can be confusing to set up.

Modular Memory Management

Unity DS-1's amazing processing capabilities come at a price—in terms of memory, not money. Your Mac's RAM drives all the program's powerful software functions. Unity DS-1's ingenious modular design maximizes memory for the features you use. Here's how it all works.

The Playback Engine runs all the applications. Set its memory configuration in the Unity DS-1 control panel. (You set all the other modules in the Get Info box of the program's icon.) The Playback Engine requires 7MB of RAM to operate, and it needs sufficient memory to hold the data in the bank(s) of sounds you want to load (those audio samples take up a lot of memory). To play back a 9MB bank of sounds, for example, you need to allocate at least 16MB to the Playback Engine's memory setting.

The Unity DS-1 Editor, where you record and edit samples and create programs, is a separate application. It needs enough space to contain the largest bank you want to load, and it requires an additional 4MB to operate.

The Keyboard, MIDI Processor, and Mixer modules have relatively small memory requirements (from 2MB to 3MB each). It's up to you to determine what your needs are, which modules must be open, and how to configure the components to squeeze the most processing power from your Mac.

Technically, it's still a computer game.

FALCON® 4.0

It's a SIMULATOR of unparalleled realism, graphics, and intensity. FALCON 4.0 uses the most realistic flight model, avionics, and weapons systems available in any flight sim — and you control every button, every switch, every aspect of flying the real thing.

There's COMBAT. Lots of it. FALCON 4.0 is the only flight simulation with a completely real-time campaign which carries on while you plot your next move. You can duke it out in the skies with Dogfight action, giving you even more combat — man-to-man or man-to-AI. Multiplay allows you take on other pilots over LAN or the Internet, or cooperate with them, flying missions together or separately.

Even if you're new to flight sims, you can jump into battle with INSTANT ACTION gameplay. Using a simplified flight model, you'll have unlimited ammo, fuel and enemies. No briefings, no missions to plan. Just action.

Is it EXPERIENCE you need? FALCON 4.0's Tactical Engagement is the most extensive mission builder and training system in this corner of the solar system. Fly training missions to hone your skills in all aspects of flight, create your own missions, or trade missions with pilots all over the world.

Can you take on the ULTIMATE in sim experiences? FALCON 4.0 is waiting. Computer aviation has never seen anything like this.

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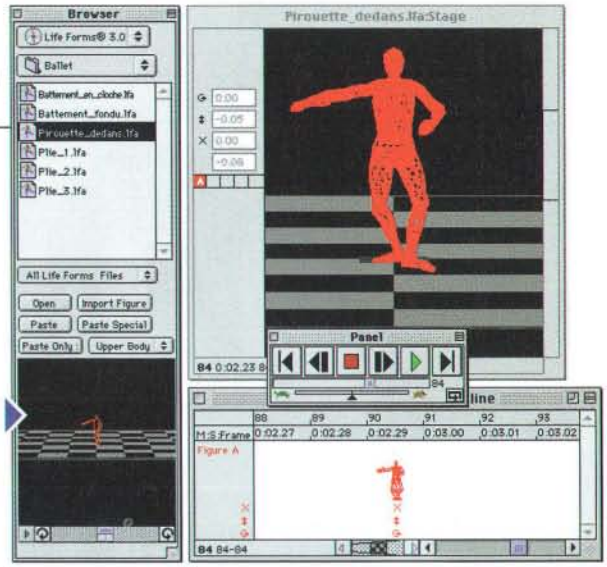
Life Forms Studio 3

DESIGN & GRAPHICS

COMPANY: Credo Interactive
CONTACT: 604-291-6717, http://www.credo-interactive.com
PRICE: $695 (SRP)
REQUIREMENTS: PowerPC, System 7.5 or later, 16MB of application RAM, 10MB of free hard disk space; QuickTime 2.5 or later, QuickDraw3D 1.5.3
RECOMMENDED: G3, System 8.0 or later, 32MB of application RAM

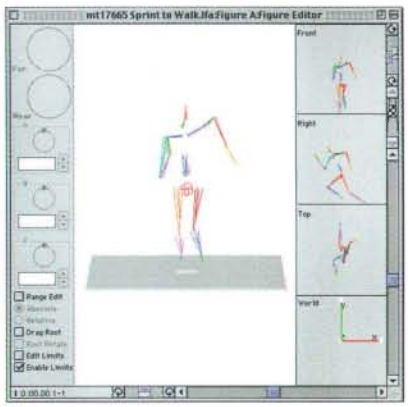


THE LIFE FORMS INTERFACE LOOKS AND FEELS like software for the Mac Plus, but its browser is a uniquely useful way to look at animation files.

Life Forms Studio has long been billed as a general-purpose character animation program, one that can talk to a very wide variety of other programs. Although it can import and export many file formats and has a strong core of devotees among regular users of motion-capture (mocap) data, as a character animation tool it leaves a lot to be desired.

Where Life Forms 3 really shines is in the viewing and conversion of animation and mocap file formats. Its browser interface is extremely useful in this regard. The browser is basically a nonmodal open dialog box, but right below the browsing area is a small, animated preview of the selected file, rendered in real time and viewable from any angle. The preview is a great way to look at animation data, especially at the many files and models that come with the program.

Most of the useful tools in Life Forms' arsenal are geared toward editing mocap data. The Joint Map editor, for instance, automates the conversion of motion data between two characters. Also useful is the ability to apply a relative offset to a joint—a numerical adjustment to the rotation of a joint that already has movement applied to it—allowing you, for example, to make a character lean back over an entire animation sequence in which it was previously upright. A data-thinning process can remove some of the many extraneous keyframes present in mocap data, but it pays no attention to which keyframes are important, unlike similar features in other programs such as Hash's Animation:Master.



LIFE FORMS' FIGURE EDITOR CAN POSE and animate figures.

It's in animating motion from scratch that Life Forms 3 falls short. The program's support for high-level tools such as inverse kinematics is rudimentary at best. Its cluttered interface will feel confining to users familiar with the intuitive IK systems in lower-priced packages like Animation: Master or MetaCreations' Poser 3. Life Forms' only animation tool of distinction is the walk generator, which creates a walk cycle for any character, based on parameters such as Step Length, Distance, and Step Frequency. This may be of some use to novices, but the cycles it produces are stiff and lifeless—the most basic components of a well-animated walk (hip and shoulder swing, for instance) are missing.

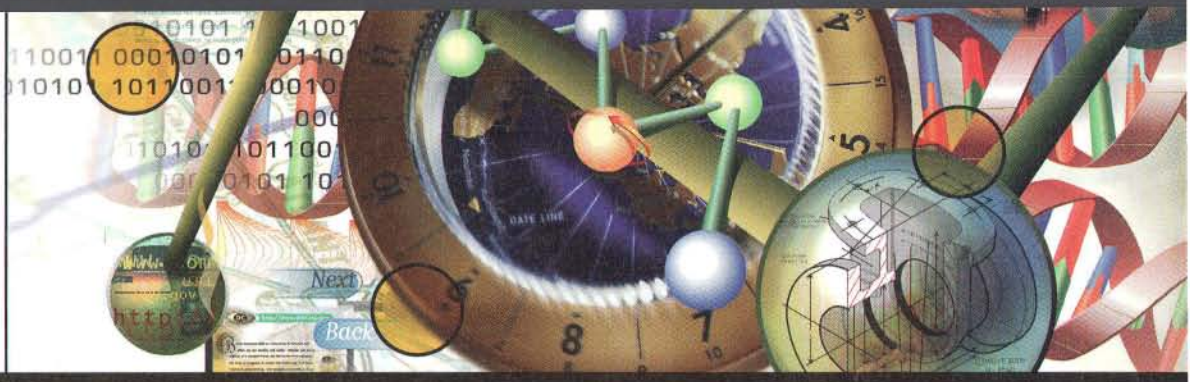
General navigation within Life Forms is awkward, too. Simply positioning the camera around a character is a chore, requiring you to tweak several clumsy sliders for the most basic result. The program's timeline also has serious problems. It displays each keyframe as a thumbnail of the character's pose. While this has the benefit of letting you see the character's pose on any given keyframe, it also makes editing a movement's timing and pacing extremely difficult, since every frame that is not a keyframe is displayed as its own gigantic empty space. So in animation where many frames are not keyframes, you get lots of irritating white space between keyframes on the timeline. This also precludes setting separate keyframes for different parts of a character, an absolute necessity for creating fluid motion easily. The timeline is best suited to viewing mocap data, where there is generally a keyframe on every frame.

Life Forms Studio 3 is a useful tool if you need to edit and convert large amounts of mocap and animation data. For everyone else, there are less expensive character animation tools that do far more.—*Raf Anzovin*

GOOD NEWS: Good motion-data conversion abilities and Joint Map editor. Easy-to-use animation file browser. Large collection of sample animation files. **BAD NEWS:** Clumsy interface. Awkward navigation tools. Rudimentary IK system. Simplistic timeline.

What's Mocap?

Mocap, short for motion capture, is a technique in which optical or magnetic sensors capture the movements of any moving character or object. The mocap system converts these positional readings to a motion file format (the most popular include Biovision and Acclaim), then imports the file into an animation program, which applies the motion coordinates to an animated character or object. Most combat games derive the complex motions of their fighters through this process. Although mocap generates data quickly, the data is often of much lower quality than what a skilled human animator can produce. Mocap data formats can also transfer motion data between programs that don't share a common animation file format.



IT AIN'T BRAGGING IF IT'S TRUE.

(AT THIS RATE WE'RE GOING TO HAVE TO THINK OF SOMETHING ELSE TO CALL THEM BESIDES CRITICS.)

OF COURSE, WE'RE ONLY REPEATING WHAT THE EXPERTS ARE SAYING. CAN WE HELP IT IF THEY GO ON AND ON ABOUT OUR REVOLUTIONARY SPRITELAYER™ TECHNOLOGY AND ITS NEAR MAGICAL ABILITY WITH TRANSPARENCIES? IS IT OUR FAULT THEY'RE SMITTEN WITH CANVAS 6'S KNACK FOR CUT-AWAYS, VIGNETTES AND COLLAGES? WE'RE STILL BLUSHING OVER THE RAVES FOR ITS SNAZZY CUSTOMIZABLE INTERFACE, IMAGE EDITING AND EASE OF USE. GRANTED, WE COULD HAVE KEPT ALL THIS TO OURSELVES. BUT THEN HUMILITY CAN BE HIGHLY OVERRATED.

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"Comparing [Freehand, Illustrator and CorelDraw] directly to Canvas is like comparing apples to, well, the whole basket of fruit...In the competition of the graphics titans, Canvas 6 is fighting with a unique set of weapons." **Macworld. February, 1999** "SpriteLayer technology is an excellent piece of programming wizardry. With it, designers can easily experiment with complex graphic ideas that would have been prohibitive or impossible in any other program." **Digital Design and Production. January/February, 1999** "With its elegant interface, Canvas is a compelling alternative to suite-based solutions that require separate illustration and image editing programs to perform the same functions." **PC Magazine. January, 1999** "...A standalone graphics application that skillfully integrates its separate components. Canvas 6's price and its range of tools combine to earn it a place on our WinList." **Windows. March, 1999** "...An integrated, easy-to-use graphics package that's so sophisticated you're not likely to outgrow it... We found Canvas 6's transparency tools alone to be worth the upgrade price." **PC Computing. March, 1999** "The hype is well deserved...Canvas 6 features a variety of transparencies that can significantly bump up the oh-la-la quotient of your images." **MacAddict. April, 1999** "Deneba has done what Adobe has refused to do: unify graphics apps...Canvas 6.0's unique ability to combine disciplines will lead the designer down previously inaccessible creative paths...SpriteLayers composite like no other program can." **Maximum PC. January, 1999** "Canvas 6's array of new transparency tools allows you to create awesome depth and layering in your images – and it does so better than other graphics products on the market today." **MacAddict Magazine.** "Canvas continues to deliver a vast scope of graphics tools in one convenient application, and does a remarkable job of breaking down barriers between bitmap and vector graphics." **PC World Online. December 28, 1998** "...No program comes close to Canvas's ability to combine vector and bitmapped graphics...Canvas 6's strong integration of text, painting and drawing tools makes it a good one-stop graphics application." **Macworld. March, 1999**

ORDER YOUR COPY OF CANVAS 6 TODAY. CALL 1.800.6CANVAS OR THE DEALER NEAREST YOU. OR DOWNLOAD A 30-DAY TRIAL AT WWW.DENEBA.COM/MACADDICT/. A FEW MINUTES AT THE CONTROLS AND YOU'LL BE READY TO DO ALMOST ANYTHING. EVEN OVERLOOK THIS RATHER UNDIGNIFIED GLOATING.

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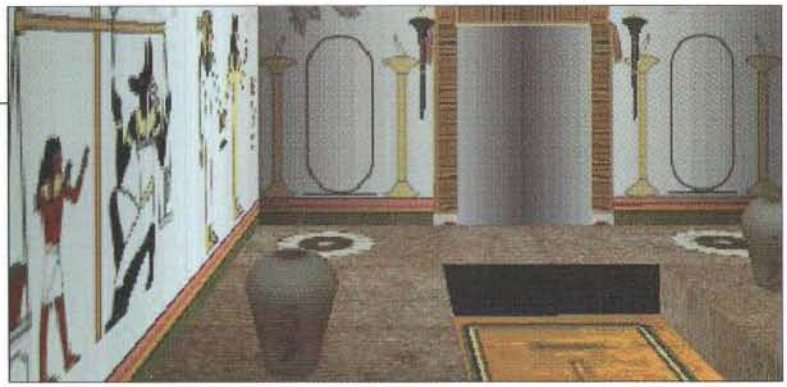
Nightfall

FUN & GAMES

COMPANY: Altor Systems
CONTACT: 650-321-1416, http://www.altorsys.com
PRICE: $30 (SRP)
REQUIREMENTS: Power Mac, System 7.5.3 or later, 9MB of RAM, 3MB of free hard disk space, 4X CD-ROM drive

FIND A DEMO of Nightfall on The Disc.



TO OPEN A SECRET DOOR in this burial chamber, you must place the proper pot on each of four flower symbols.

Egyptian history and mythology fascinate Americans. Whether it's creepy mummy movies or traveling exhibitions of treasures recovered from the tombs of pharaohs, we shell out for tickets. Egyptian culture permeates Nightfall, Altor Systems' new first-person adventure game. In Nightfall, you become trapped in an ancient Egyptian tomb with 14 sprawling levels ahead of you, your only hope of escape some notes and clues a long-dead archaeologist left behind. These scattered eighteenth-century scribblings are your sole link to another person; you'll have no other human contact in this game.

So what lies before you? Mile after mile of exploration and puzzle solving, as you wander through tunnels to examine artifacts, monoliths, hieroglyphic wall carvings, and elaborate burial chambers. The pharaohs prepared chambers like these to enhance the afterlife, surrounding themselves with treasures and comforts. The places and events Nightfall depicts are fictitious but based on solid research, so you get the realistic feel of an enormous tomb.

One outstanding aspect of the game is that you can jump right in. There's a great deal to see and explore in this 3D underground. A simple virtual hand, which you control by mouse or keyboard, permits you to enter the world quickly, without the fuss and bother of learning to navigate. The cursor points forward, up, down, right, or left to show you the way, depending on where you place it on the screen. The game has few limits: If a tunnel or chamber exists, you can enter and explore its every aspect.

Of course, you can't go into some chambers until you solve a puzzle that gives you access. Most of the solutions are easy enough, involving language comprehension, hand-eye coordination, or completing simple construction projects. The game encourages lateral thinking, including the use of random objects in unintended ways to solve puzzles. Can't open a door? Stack objects and climb over it. You're less likely to get stuck on a particular brain-buster if you use the game's own objects.

SACRED DOGS GUARD an anteroom leading to a burial chamber.

Or you can skip the puzzles entirely. A lot of the scenery is accessible without requiring you to open secret doors. And for those who want to explore without bothering to solve anything, the game CD includes saved-game files for levels 2 through 13. Nightfall also comes with editing tools and source code, in case you wish to customize the game or make your own 3D levels.

Nightfall has other unique qualities. Its physics aren't true to life as they are in most 3D games. For example, you can climb by pointing your virtual hand and clicking. Ordinarily you point and click to pick up an object, but some objects—such as projections embedded in a wall—are too heavy or firmly fixed to move. Clicking them with the virtual hand allows you to lift yourself as if using your hands to climb a wall. Or you can hitch a ride by grabbing a moving object that drags you along behind it.

Altor claims that Nightfall has "visual force feedback," which supposedly gives you the feel of bumping into obstacles and picking up things of different weights. But this little feedback gizmo is pretty much a wash. The mouse doesn't leap out of your hands or shudder from impact the way some analog or digital controllers do.

In spite of its many good qualities, the game has one unfortunate drawback: its lack of support for all hardware acceleration. Myst, Amber, and Morpheus fans will enjoy Nightfall, but the game will appeal mainly to people who crave simple exploration of exotic locales, with or without the mental exertion of puzzle solving.—*John Lee*

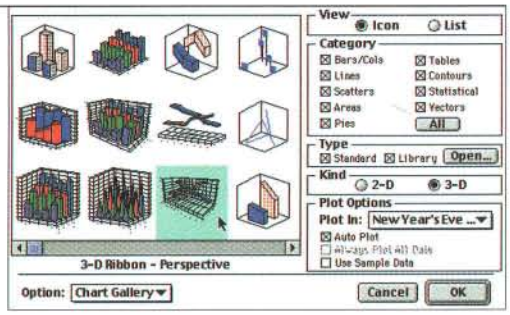
WATERFALLS FILL NUMEROUS POOLS and streams in Nightfall, while switches create mobile tracks to carry you away.

GOOD NEWS: Realistic tomb graphics. Seamless 3D movement. Puzzles have multiple solutions.
BAD NEWS: No interaction with other people. Doesn't support Glide and OpenGL hardware acceleration.

DeltaGraph 4.5

PRODUCTIVITY

COMPANY: SPSS
CONTACT: 800-543-2185 or 312-651-3000, http://www.spss.com
PRICE: $295 (SRP)
REQUIREMENTS: 68030 or faster, System 7.5.5 or later, 8MB of RAM, 20MB of free hard disk space

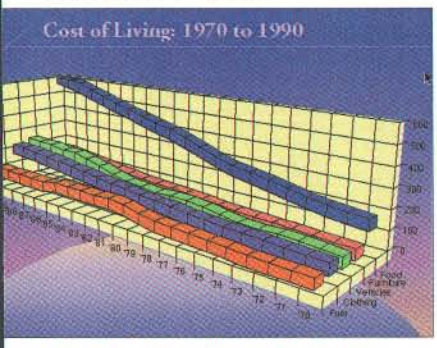


DELTAGRAPH'S CHART GALLERY IS EXTENSIVE, offering more than 80 standard charts.

For years, DeltaGraph has been one of the top Mac charting programs, offering tons of chart types and presentation options for business and science users. Now, more than two years since the last update, SPSS, which acquired DeltaGraph in 1997, has improved on this excellent product.

The program offers an array of slide-creation and graphing options, including presentation templates with 12 page layouts for each template; drag-and-drop slide formatting; and the ability to mix and match charts, graphs, and bulleted slides to create slide shows with special effects. You'd expect these features from a program like PowerPoint, but in DeltaGraph they're only the appetizers.

DeltaGraph's main course is its enormous array of more than 80 2D and 3D graphs. Choosing which chart you want is simple—you just scroll through a well-designed gallery. If you're not sure which one will best illustrate your statistics, you can use the program's built-in Chart Advisor to narrow your options. Some notable additions to this version include intensity and paired-intensity scatter charts—especially useful for complex scientific data—and volume-high-low-close charts for graphing movements in stocks and other equities.



DELTAGRAPH ENABLES YOU TO TURN CHARTS into presentations that dazzle.

FIND A DEMO of DeltaGraph 4.5 on The Disc.

If you're a number cruncher, you'll appreciate the inclusion of the latest edition of MathType Equation Editor, as well as the ability to import not only Excel, WKS, SYLK, and Trapeze data, but also tab-, space-, comma-, and custom-delimited files. On the graphics side, you can import MacPaint, Adobe Photoshop, QuickTime, BMP, PNG, GIF, TIFF, EPS, QuickDraw GX, and several other common formats.

In addition to its vast range of chart and presentation options, DeltaGraph shines in the ease-of-use category. Menus and dialog boxes are logical and easy to navigate, and you can preview chart changes without leaving the dialog box you're in. Graphs that might take hours to create in other programs—charts with broken axes, for example—come standard with DeltaGraph.

DeltaGraph is remarkably stable and fast. It can draw a 3D chart representing thousands of data points in seconds. The well-written and comprehensive manual guides users through myriad options.

If you need only simple graphs and charts in your work, you'll do fine sticking with graphing modules in programs like Excel and PowerPoint. But if you use charts often, you'll save hours of work and impress the crowds with DeltaGraph.—*Jeff Merron*

GOOD NEWS: Extensive graph formats. Easy chart customization. Pantone color support. Imports and exports Photoshop files. Fast and stable. Supports AppleScript.
BAD NEWS: None.

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power play

Games are blazing a trail all over Macdom this month.

GameWIRE

"Better late than never" goes the saying, and that's how Mac gamers look on the bright side. This month's bright side is that more developers are planning Mac versions of their greatest, if not latest, games, and playing older games is kind of retro cool. Among the new titles is **ION STORM'S UPCOMING ACTION BLASTER,** Daikatana. And don't forget LucasArts' forthcoming *Star Wars* title!

PC gamers who pooh-pooh **THE MAC AS A GAMING PLATFORM** should realize that our gain is their gain. For example, Sony has so far failed to stop Connectix from selling its **VIRTUAL GAME STATION,** which emulates PlayStation titles on the Mac. With the Windows version waiting in the wings, what happens to Mac gamers now will affect PC gamers soon.

With Mac gaming so hot, **NEW SITES DEDICATED TO MAC GAMES** have mushroomed on the Web. The good news is that you get variety and difference of opinion, which is important in any open society. The bad news is that some editors have ruffled a few feathers by changing affiliations, leaving gamers confused. Tuncer Deniz, former project lead for Bungie's Myth and Myth II, recently left Bungie after three years to return to *Inside Mac Games,* a move that should rejuvenate its Web site and magazine. A few editors of *Inside Mac Games* left the established mag to found a new site called **MACREACTOR** (http://www.macreactor.com). Look out for them. Also, we give a big welcome to MacGamez.com (http://www.macgamez.com). Now, can't we all just get along?

We can get along all right, but we'll still frag you with our grenade launcher. **ALL'S FAIR IN LOVE AND QUAKE.** For the first time, Mac gamers can attend QuakeCon 99 this fall in Mesquite, Texas, where Quake III will be the name of the game. Mac users will have to use PCs, but it's still fighting fire with fire! Even Apple has gotten into the act by sponsoring the event.

Software is cool, but hardware is better. A top trend in gaming is **REQUIRED HARDWARE ACCELERATION.** Rumor has it that Quake III for the Mac will require a minimum of Voodoo2 or Rage 128 to run. Bungie's forthcoming action title, Oni, will require at least a Voodoo1-class chip set. Think that's unfair? At least ATI Technologies is offering a **TRADE-UP PROMOTION** on its cards. If you want a Rage 128–based card, you can trade in your old card directly through ATI and get $30 off the sticker price.—*JH*

GAMES & GEAR

Damn, USB is cool. Check out the new goods CH Products has lined up for USB-equipped Macs in 1999. Coming in late March, the USB Gamepad ($29.95) will sport your choice of the iMac's delicious colors or a glossy black finish. It has 10 buttons, an eight-way directional pad, an 8-foot cable, and a wicked industrial design. CH Products' new menu also includes the Flight Sim Yoke USB ($109.95), for hot games like Fly and Falcon 4.0. It has 19 buttons (including an eight-way hat switch), a pair of two-way rocker switches, and five axes of control. Whoa. Finally, look for the F16 Combatstick USB. It's basically the USB version of the F16 Fighterstick, except that the Combatstick allows more data I/O and is therefore more precise for flight simulation. It also has a rotary throttle and trim controls, so you can tuck and dive in the sky. Pricing was not available at press time. For more info, head to http://www.chproducts.com—*JH*

TOP 10 Best-Selling Games for January 1999*

THIS MONTH	LAST MONTH	TITLE	PUBLISHER
1	5	Entertainment Pack	Havas Interactive
2	2	Star Wars Rebel Assault	LucasArts
3	4	Tomb Raider II	Aspyr Media
4	7	Unreal	MacSoft/GT Interactive
5	8	Civilization II	MacSoft/GT Interactive
6	9	More Mac Cube	Aztech New Media
7	10	Mac Cube	Aztech New Media
8	6	Deer Hunter	MacSoft/GT Interactive
9	3	Monopoly Game	Hasbro Interactive
10	—	Sim City 2000	Electronic Arts

* Source: PC Data

Is That a Rocket Launcher in Your Pocket...

or are you trying to frag me?

UNREAL

With higher-speed connections becoming more and more prevalent in homes, the Internet has redefined game development. Networked multiplayer games used to happen on LANs in offices or via AppleTalk between Mac-only environments. Now you can fight opponents around the world in games such as Quake, Quake II, Unreal, Myth, and Myth II. Because multiplayer gaming has become so important, developers have gone back to the drawing board to design games that focus on training the player for multiplayer mayhem and mastery.

This emerging paradigm is the raison d'être of two upcoming Mac titles, Unreal Tournament and Quake III: Arena. Both games will have single-player levels that don't strictly follow a story. Instead, bots designed to make the new player practice new skills will fill each level. For example, all first-person shooters require the player to use both hands; one hand controls character movement via the keyboard, while the other controls the mouse for looking (called "mouselook" among gamers), aiming through crosshairs, and firing with the mouse button. Complex moves such as circle-strafing and leading require using both keyboard and mouse with precision. Unreal Tournament and Quake III: Arena will take the idea of the in-game tutorial to a whole new level: At the end of the single-player contests and after many levels of bouting with AI-controlled bots, the player can dive into online multiplayer action and even team up with others to engage in games such as Assassin, Capture the Flag, and Assault. Other games already popularized by Myth and Myth II—for example, Territories and King of the Hill—should also be available from the developers or on player-modified maps.—*JH*

UNREAL TOURNAMENT WILL FEATURE heavy-duty teamplay, in which your team will compete in games like Capture the Flag. In the arena-style setting shown here, more bullets fly than in a John Woo flick.

QUAKE III

SINGLE-PLAYER QUAKE III WILL TRAIN NEWBIES with skill-building exercises and introduce them to powerful, bone-crunching weapons that can clear a corridor in seconds.

ask the game guru

Q. Can I use a PC Voodoo2 card in my Mac if I use illegal third-party drivers?

A. PC Voodoo2 cards are inexpensive, often costing $100 less than the only Voodoo2 card for the Mac, the $199 Game Wizard. The PC hardware, if based on a reference board, will work in a PCI-based Mac with the appropriate Mac driver. The only *legitimate* Mac driver ships with the Game Wizard, but an *illegal* Voodoo2 (Glide) Mac driver was released on the Internet a few months ago, causing a great deal of alarm among users loyal to Mac manufacturers. The pirated driver works with many PC Voodoo2 cards, but you don't get complete compatibility with all Glide games, and the untested driver can result in a mediocre gaming experience due to graphical glitches and display errors. Also, don't expect proper tech support. The bottom line is that no one supports this pirated driver. If you want high-quality gameplay and real support, you should think about paying more.—*JH*

how to

Can't sleep? Girlfriend out of town? Pull up a chair and learn something.

Build 32-bit Icons for Mac OS 8.5

By Dave Brasgalla and Gedeon Maheux

When Apple released Mac OS 8.5, one of the snazzy new features the company touted was 32-bit icons. This new icon format allows the use of millions of colors and 256 levels of transparency. If you're running Mac OS 8.5, you'll see icons that have gradated blends, transparent areas, and smooth edges. They're beautiful!

What Apple didn't do was give Mac addicts a way to experiment with this artistic new medium. Since you can't edit OS 8.5 icons with such programs as ResEdit, new tools had to be developed. IconBuilder, from the gang at the Iconfactory (http://www.iconfactory.com), is a plug-in tool for Adobe Photoshop that gives you the power to create almost any kind of icon effect. Start by designing an icon in Photoshop, then use IconBuilder to turn that image into a resource so that your Mac knows it's an icon.

The following guide walks you through the creation of an icon. Once you've seen how it's done, we encourage you to explore the possibilities of Apple's new 32-bit icon format.

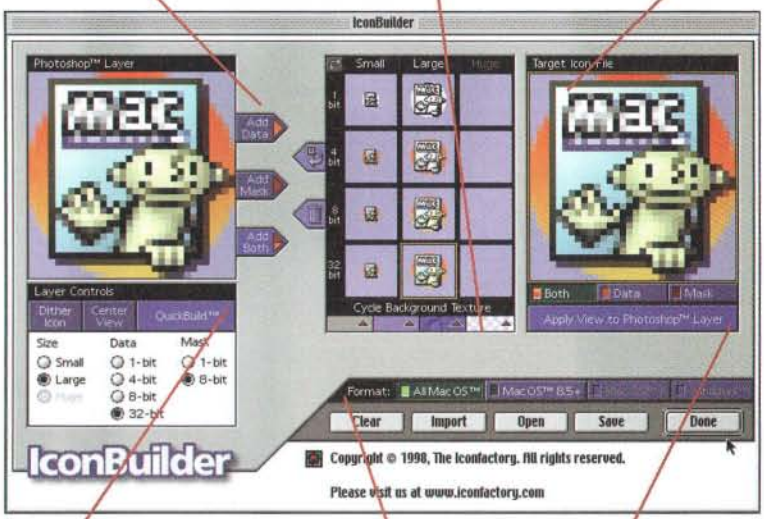
Remember that when you build an icon, you are really creating a whole family for that icon. If you make both a version of your icon that is the standard 32 by 32 pixels, and a smaller 16 by 16 version, IconBuilder combines them so the Mac OS can see both versions in one icon. Likewise, for older Mac systems, use IconBuilder to create a black-and-white version, a 4-bit (16-color) version, and an 8-bit (256-color) version with your 32-bit icon.

FIND A DEMO OF ICONBUILDER, IconDropper, the icon shown in this article, and a pack of 32-bit icons designed by the Iconfactory on The Disc.

YOU CAN ADD OR DELETE RESOURCES (masks and data) in your icon with these controls.

CLICK THESE TO SEE what your icon will look like against a variety of patterns and textures.

USE THIS WINDOW for a magnified view of how your icon will appear on the desktop.



THE QUICKBUILD BUTTON automatically creates all sizes and views.

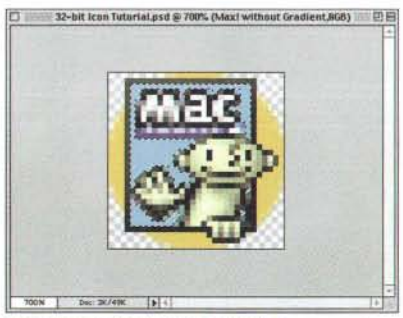
DON'T FORGET to select a format for your icon and then save it.

AFTER YOU IMPORT AN ICON into IconBuilder, you can get it back out to Photoshop by clicking here.

1 Add a Gradient

Mac OS 8.5's new 32-bit icons support beautiful fades, so let's add some. You can always draw an icon from scratch, starting with a 32-by-32-pixel file or shrinking a larger image to 32 by 32 pixels. For this how-to, though, we'll start with an existing 256-color icon of Max. We've prepared a sample Photoshop file containing this icon and every additional layer we make, so you can see for yourself what we've done. You'll find the file on The Disc under the file name 32-bit Icon Tutorial.psd.

We first add a nice gradient to the magazine cover in our icon. We begin this process by selecting just the magazine cover in Photoshop. We then pick some nice foreground and background colors, and use the Gradient Fill tool to put a sweet gradient behind Max.



WE MUST CAREFULLY SELECT the magazine cover to apply our gradient.

HERE'S THE ICON WE STARTED WITH—and then what it would look like if we built it after this first step.

2 Add an Antialiased Gradient

Using the same technique, we apply a gradient fill to the big circle behind the magazine and give it an antialiased edge. We pick two new colors for Photoshop's foreground and background—in this case, orange and yellow. We then select the big circle behind Max (we had the foresight to put it on its own layer), and use the Gradient Fill tool on the circle. We end up with a nice orange-to-yellow fade—and because the area around the circle is blank, Photoshop knows that it must antialias the circle (that is, make its edges smooth).

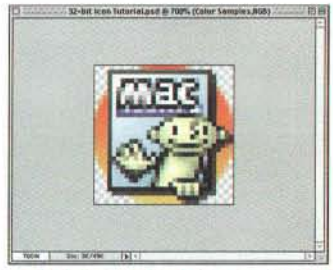
HERE'S WHAT MAX WOULD LOOK LIKE if we stopped to build him now, but we'll do a few more steps first.

KEEPING OUR CIRCLE ON A SEPARATE LAYER in Photoshop helped us go back and easily add a colorful gradient.

3 Add a Transparent Drop Shadow

Now we have two big 32-bit features: 32-bit gradient fills, and the circle with an antialiased edge. But what about those really cool Mac OS 8.5 transparent-shadow effects? We decide to add one by giving the magazine cover a drop shadow. We start our shadow by making a selection around Max and the magazine cover, then putting that selection on a new layer (using the Add Layer button on the Layers palette). We then move the selection down and to the right, and fill it in with black. To make our drop shadow partially transparent, we lower the selection's Layer opacity to 70 percent.

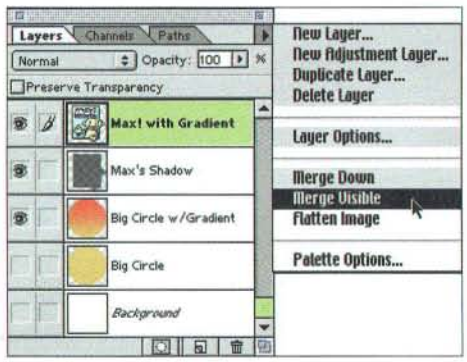
HOPEFULLY, we'll end up with something like this.



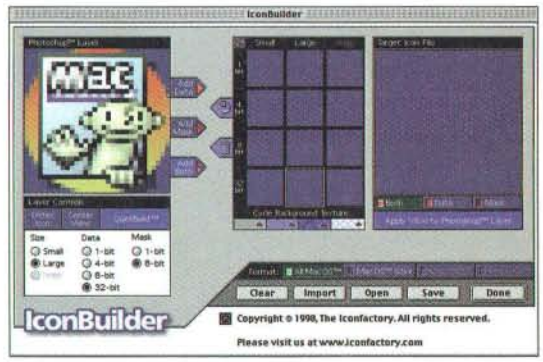
TO GIVE THE MAGAZINE A DROP SHADOW, we carefully select the magazine on the icon, move the selection over, and fill it. Be sure to lower the fill opacity to give it partial transparency.

4 Launch IconBuilder

We're now ready to start compiling the icon in IconBuilder. When we fire up IconBuilder, it loads only the current layer, so we'll need to merge all the elements of our fancy new icon into a single layer. We make sure to select only layers we want as visible in Photoshop's Layer menu, then we choose Merge Visible from the Layers palette menu. We select everything (command-A), then launch the IconBuilder filter, which when installed appears near the bottom of the Filters menu under Iconfactory.



CHECK TO BE SURE you've turned off the background and all extraneous layers before taking this step.

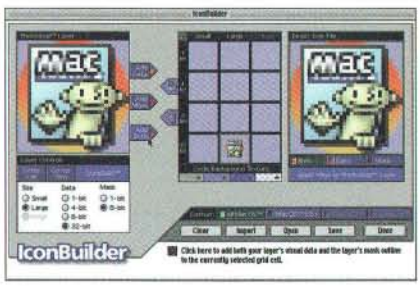


LAUNCH ICONBUILDER, and you'll see your image in the Photoshop Layer window.

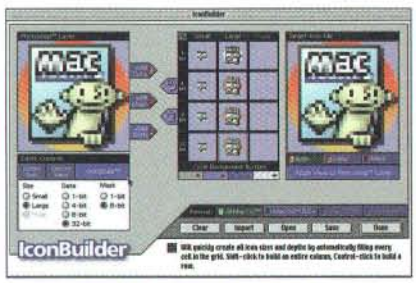
5 Save Your Icon

In IconBuilder, we see our icon in the Photoshop Layer window on the left. We click on the 32-bit/Large square in the center grid and click Add Both. This transfers both the icon's image and the transparency information used to build the icon's mask. The mask tells IconBuilder which areas of the icon are transparent. For example, we want the area on the outside of the circle to be transparent so that the desktop shows through. Everything with colored pixels is part of the icon mask; the rest is transparent. Our new icon appears in the Target window.

To fill in the rest of the squares, we click QuickBuild. This automatically completes the icon family using our Photoshop image. We click the Save button to finish our creation, then click the Done button to return to Photoshop.



YOU'LL SEE YOUR NEW 32-bit resource in the large Target Icon File window on the right.



CHECK THOSE LOWER BIT DEPTHS to make sure everything looks good. QuickBuild is smart, but it can't guess what you want.

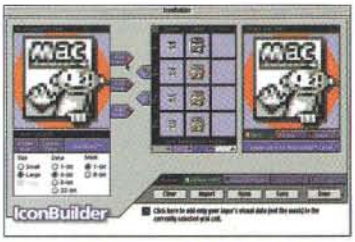
NOTE THAT THE IMPORT, Open, and Save dialog boxes always take you back to the last file you worked with in that dialog box.

6 Adjust Smaller Sizes

This is as far as some people may want to go, but you'll notice that the lower bit depths and small 16 by 16 sizes can look...well, less than ideal. We want to adjust these variables to get better-looking icons for smaller views and older systems. To do this, we create a new, blank Photoshop layer and relaunch the IconBuilder filter (which will still display the icon we just made). To work with the large, 4-bit format, we select the Large/4-bit Icon square. We then click the Apply View To Photoshop Layer button to copy the 4-bit large version onto the blank Photoshop layer, where we can tweak it to look good.

When we have the icon the way we want it, we click Select All and launch IconBuilder again. With the Large/4-bit Icon square still selected, we click Add Data to change just the color information while leaving the mask untouched (since the 1-, 4-, and 8-bit large icons share this mask). We now save the icon again and overwrite our previously saved version. Our adjusted 4-bit version is now part of the icon family.

REMEMBER TO MAKE SURE you're working on a blank layer; otherwise IconBuilder may overwrite a layer you wanted to keep!

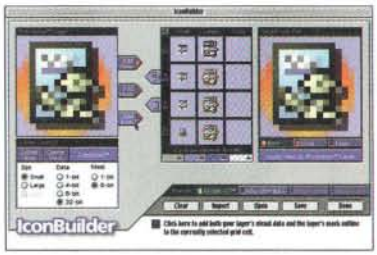


SELECTIVE ADDING IS A POWERFUL FEATURE of IconBuilder. You can add just the icon pixel data, just the mask, or both—very handy.

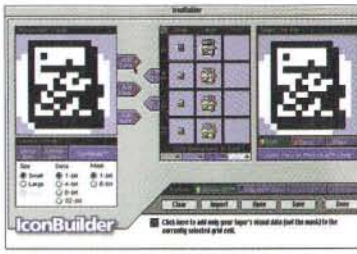
7 Build the Family

When IconBuilder generates the small icons, it simply crops our 32-by-32-pixel image to a 16 by 16 square. If you want your small icon to look like a little version of your large icon (rather than just a cropped version of it), you'll need to create the small icon separately.

To make a small icon, we keep working on a 32 by 32 canvas, but we stick to a 16 by 16 area based in the center of the file, to which IconBuilder will crop. When we complete the little version of our icon, we again launch IconBuilder. This time we want to change only the icons in the Small column. We first select the 32-bit/Small Grid square and click Add Both. We then click on the 8-bit/Small Grid square and again click Add Both. For the 4-bit and 1-bit small versions, we need only press Add Data, since those levels automatically use the 8-bit version's mask. We then click Save to overwrite the previous version of our icon.



IF YOU WANT a small 16 by 16 icon resource, you'll have to make your own, because IconBuilder crops the 32-by-32-pixel data for these sizes in QuickBuild mode.



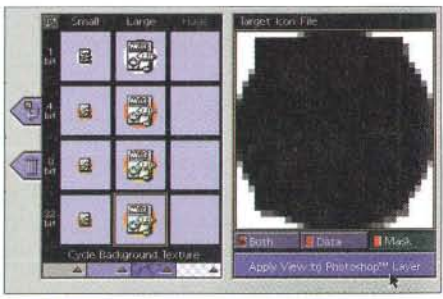
BLACK-AND-WHITE ICONS are sometimes the hardest to work with, so take special care to ensure that they're recognizable.

8 Finished!

We've created a 32-bit Mac OS 8.5 icon with antialiased edges, transparency effects, and fades that use millions of colors! Armed with this basic knowledge of how IconBuilder works, don't be afraid to experiment. Using the Both/Data/Mask Button Selection button, try applying the 32-bit mask to a Photoshop layer, and use a combination of the Erase and Paintbrush/Airbrush tools to play with the masking. (You can reapply it to your icon with the Apply Mask button.) You can also fiddle with the opacity of certain layers in Photoshop before merging, and apply the new transparency information to your icon.

Something to remember: When you are working on a mask layer, you are working with alpha channel information. So always add to it with whatever tools you like, but subtract with the Eraser tool. If you simply paint with white, the channel sees the pixels as solid.

MAC OS 8.5'S 32-BIT ICON resources contain a wealth of graphic possibilities.



DON'T BE AFRAID TO TRY CRAZY EFFECTS with the 32-bit mask. You can use IconBuilder's background and texture previewer to see how your experimentation will translate to the desktop.

Visit Dave Brasgalla and Gedeon Maheux at their home on the Web, the Iconfactory (http://www.iconfactory.com).

Icon Implementation

So what are you going to do with these cool 32-bit icons? If you're new to working with icons, you may not know that you can copy and paste them from their Get Info dialog boxes. But if you're using Mac OS 8.5, keep in mind that an older version of the operating system won't see the custom icons you paste in. To solve this problem, we suggest our IconDropper. It ensures compatibility with all Macs, and its contextual Finder menu makes changing your icons even easier.—*Craig Hockenberry*

MOVING AN ICON from Mac OS 8.5 to an older OS using a simple copy-and-paste can be frustrating.

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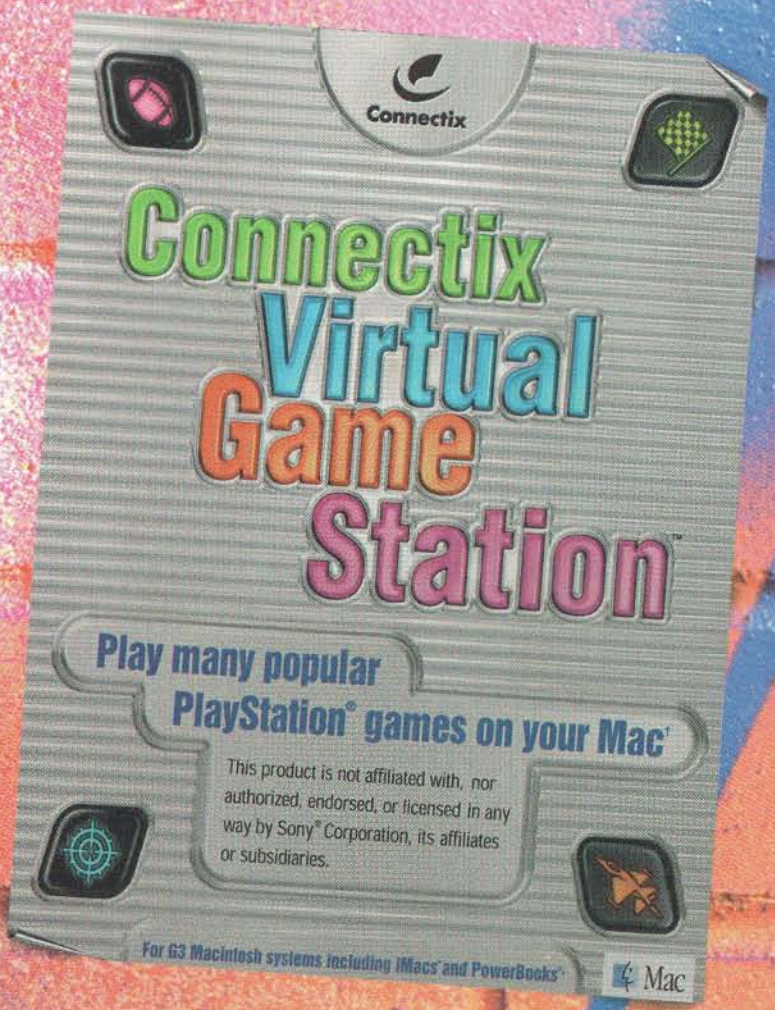

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how to

Build an Internal SCSI Device Case

By Niko Coucouvanis

It's a sure sign you're a Mac addict—you have five internal SCSI hard drives (we won't ask where you got them), but you can't cram them all into that new Power Mac G3 minitower case. Fear not—we can teach you how to build yourself a drive bay for those internal goodies with the help of an old X86 PC case (don't cringe, you just want it for the handy drive-mounting cage and the all-important power supply), some cables, and possibly some tin snips. Having such an external drive bay even helps when it comes to the ol' budget—internal drives are generally cheaper than external ones, and if you buy a couple of internal drives and drop them in your homemade external SCSI drive case, you stand to save some money.

To demonstrate the building of such a drive bay, we constructed our very own portable SCSI-based CD burning station. We used two regular internal SCSI devices—a CD-R and a 2GB hard disk—plus the power supply and drive cage from a gutted PC minitower. Here's how it all came together.

FIND SCSI-PROBE 5.0 on The Disc.

Parts and Tools

Here's what you'll need to build your own SCSI case.

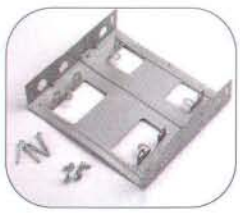
■ Wayward internal SCSI drives.

■ An external SCSI cable to connect the case to a Mac (Apple 25-pin to Centronics 50-pin).

■ An internal SCSI cable to connect the internal SCSI drives to each other. You can either buy all of the components for this and build it yourself, or buy a premade cable.

■ Two Rear L-plate slot adapters. You can buy these at Granite Digital (http://www.scsipro.com) for $4 each, part number 6926.

■ Jumper blocks (for changing SCSI IDs and termination). Note: This photo is not to scale. Jumper blocks are tiny!



■ Mounting hardware, including assorted nuts, bolts, and washers, as well as drive rails and/or 3 1/2-inch to 5 1/4-inch drive adapters.

■ A generic PC case, optimally including at least one standard 12-volt cooling fan, a 200w AT power supply, and stock 5 1/4-inch and/or 3 1/2-inch drive cage.

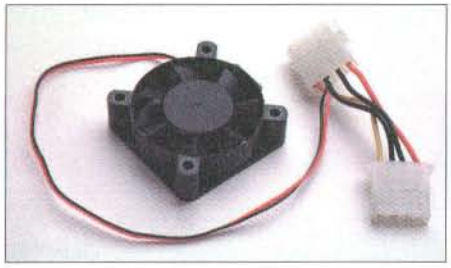
■ The tools to put it together—assorted Phillips and flathead screwdrivers, and some strong needlenose, channel-lock, and/or Vise-grips pliers.

1 Picking a Case

The first thing to do is get a case to house your drives. PC cases typically come complete with a power supply and mounting cages, and they can be incredibly cheap—don't spend more than $50 for one. Make sure the power supply in the case is an externally switched, AT supply with standard four-wire internal power plugs. When in doubt, ask; AT is a well-known standard. A standard power supply is 230w and powers up to six drives. Don't turn on the power supply until you plug in a drive or two—power supplies need something there to receive the juice when they dole it out.

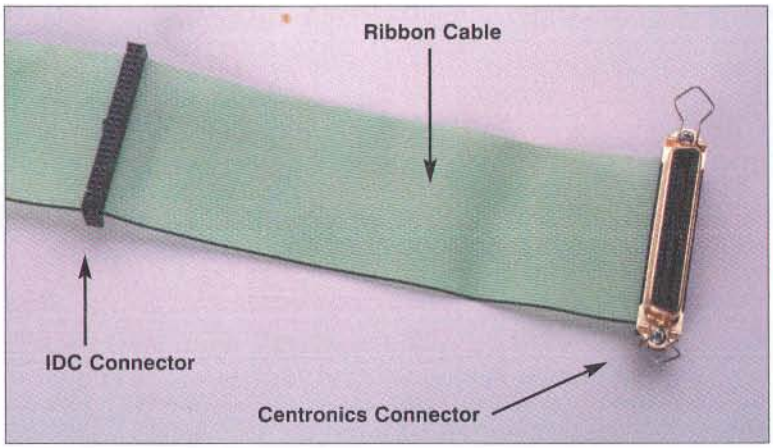
2 Gutting the Fish and Keeping It Cool

Once you have your case, pull everything out of it except the power supply and drive cages. Remove even the fan, as it draws its power through the motherboard. The simple workaround is to get a CPU fan instead. They usually come with a flow-through power adapter that fits in where the drive plugs into the power supply. We found this sexy one at Weirdstuff Warehouse (see "Get the Case" below for contact information) for $4.95. It's got to be good—after all, it's made to cool a Pentium II.



3 Install the SCSI Infrastructure

The SCSI cables and connectors for the inside of the external case come in many flavors for many budgets. Do-it-yourself types can re-create the stock internal SCSI chain with bulk 50-wire PVC-coated ribbon and some crimp-on connectors: the standard Centronics end plug and IDC connectors. An optional Centronics end plug SCSI connector on the other end of the ribbon makes it easy to add to the chain or terminate it externally. For the rest of us, though, there is the much more elegant (though far less economical) solution of just purchasing a custom SCSI ribbon from Granite Digital. We picked up a custom-built, two-drive, Centronics port–equipped, double-insulated, double-ferrite ribbon cable with teflon coating on the inside and 30 micron gold-plated connectors for $59.



Get the Case

As you may have noticed, junk PC cases are everywhere: secondhand stores, local PC shops, and of course, mail-order catalogs on the Internet. We got ours from **Weirdstuff Warehouse** (408-743-5650, http://www.weirdstuff.com) for $14.95—complete with the power supply and drive-mounting cages. Keeping with the generic theme, everything else you'll need to get the job done is *cross-platform* and available off the shelf at any decent computer shop. Here are some other sources for PC cases.

- **PC Parts** (800-666-9373, http://www.pc-partsinc.com) You won't find anything more generic than this; we saw a PS/2 386 Model 70SX/16MHz in the company's online catalog for $8. That's less than one-third the $25 shipping cost, and you get the pleasure of gutting it yourself.

- **Case Depot** (800-200-6118, http://www.casedepot.com) These folks also carry external SCSI cases in case you chicken out and decide that buying is better than building.

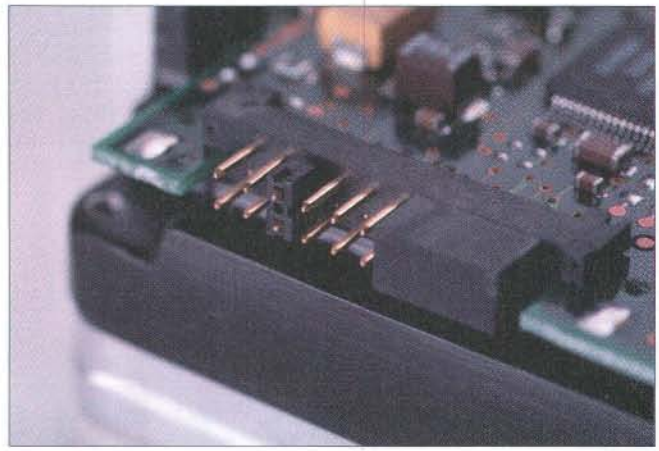
4 Cable Entry

On the back of the PC case, secure the Centronics end plug to one of the empty PCI slots. You need to thread it through a rear L-plate slot adapter, which fits into the PCI slot. Presto—you have a port! Thread the cable through the case so the internal drive connectors are close to the drive cage, then thread the Centronics cable back through a second PCI slot. Secure the second Centronics end plug to another of the PCI slot openings using a second rear L-plate adapter. Here, we show one L-bracket mounted on back, with the ribbon cable threaded partially through the case.

5 Changing SCSI IDs on Internal Devices

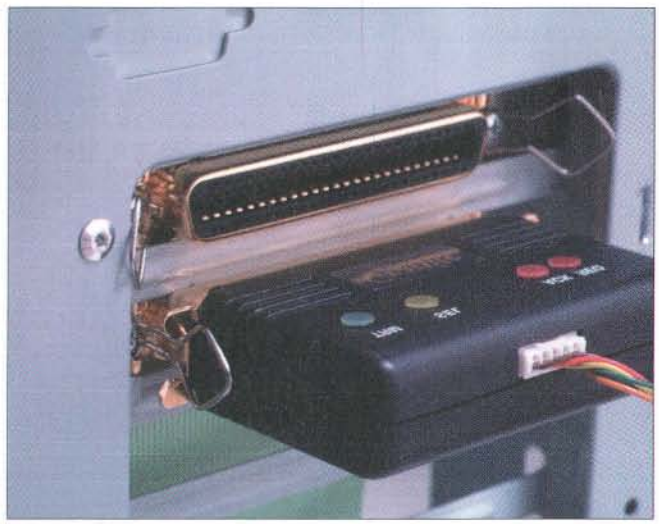
It's important to get your SCSI IDs in line before you get all your drives installed. First use a program such as SCSIProbe (on The Disc) to check the SCSI bus and see what IDs your Mac's internal devices already possess. (On some Power Macs with two SCSI buses, such as the Power Mac 9500 and 9600, you don't have to worry about this, as the only thing on the external bus will be the SCSI devices in the case—the internal drives will be on the separate internal bus.)

To set the SCSI ID on your new drives so they won't conflict with the devices already in your Mac, you must configure the drive's SCSI ID jumper pins to unused ID numbers. If your jumper pin settings aren't listed on the drive itself, Blue Planet's Tech Page (http://www.blue-planet.com/tech) lists them for every drive ever made. Also make sure that termination is turned off for each drive (you do this via the jumpers as well).



6 Setting Drive Termination

Although you have a pretty spiffy rig here, you're still dealing with SCSI, which takes away much of the fun. To make things easier, use a slick external diagnostic terminator from Granite Digital. This bad boy can end almost all of your SCSI troubles—flashing lights monitor termination and data flow in both directions, so it's easy to tell if a problem is a bum drive, a bad cable, misconfiguration, or just a loose plug. You can get the external diagnostic terminator for $69, with an optional $19 LED remote, by stopping by http://www.scsipro.com or calling 510-471-6442. This terminator has a cable that attaches to the LED remote diagnostic block, which we'll set on top of our case—just to keep an eye on things.

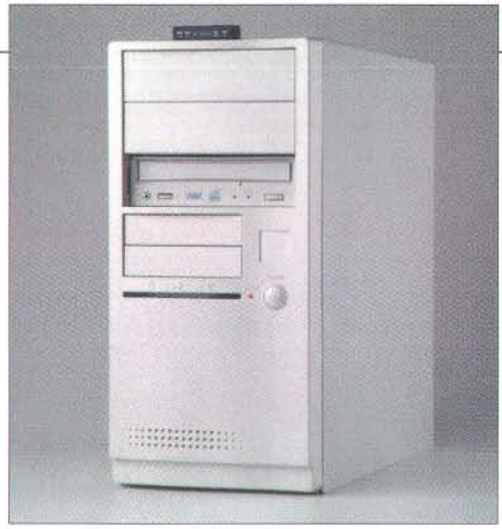


My Jumper Jumped!

What's that, you lost your extra jumpers? Not to worry. Check with the drive's manufacturer or your local PC shop. Cables N Mor sells 10 jumpers for a buck in its online catalog (http://www.cablesnmor.com/install.html).

7 Sew It Up

Attach the drives to the PC case's drive cage, the SCSI cables to the drives, and finally the power supply leads to the power supply ports on the drives. Put the case cover back on, and you're ready to roll. The finished case may look like a PC, but you know what's inside. Attach the 25-pin end of the external SCSI cable to your Mac and the 50-pin end to the free Centronics port on your SCSI case. Plug the SCSI bay into a wall outlet, flip the PC case power switch, then power up your Mac. The SCSI drives roar to life. By the way, the little black box on top of the case is the terminator's LED remote, which will give us valuable feedback on what's going on inside.



Don't Forget

If you're plugged into a Mac that has an IDE drive (lots of Power Macs do, including the new G3s), and your SCSI card has no onboard termination (lots don't), you'll have to power down the computer before cutting power to the drive and its terminator. Otherwise you'll break the bus circuit and all hell will break loose. You already know not to do any hot SCSI plugging, right?

Super Stealth Mobile SCSI Backup Unit

Let's put a *MacAddict* touch on this by putting your electronics in an ultracool case—a briefcase, that is. Here's where the tin snips and an inexpensive attaché case come into play. You're going to make a mobile response unit.

A good set of tin snips makes short work of extracting the metal chassis that holds your power supply and caged drives in the PC case. (As PC cases vary, this extraction may require some ingenuity and/or dexterity. You should remove your drives and wiring before getting too carried away with the snips.)

We chose a standard Samsonite attaché: boxy, portable, geeky, somewhat sturdy, and inconspicuous. Perfect. The entire assembly wedges right in with just a little help from the pliers. It's such a good fit that everything stays put when you put the top down and swing into action. Since it's designed to be operated only in the deviously stealthy open-on-a-table position, no additional mounting is required.

YOUR MAC'S new desk mate.

ask us

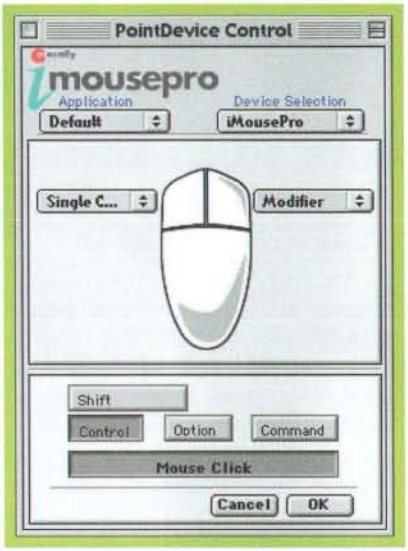
Ramblings from a madman. Um...we mean...advice from a Mac expert.

Questions?

Submit technical queries or helpful tips directly via email (askus@macaddict.com) or c/o MacAddict, *150 North Hill Dr., Suite 40, Brisbane, CA 94005.*

FIND TATTLETECH, DeskPicture, and ShowMate 2 on The Disc.

Q I have had my Bondi blue iMac for some time now. I am a gamer, so I recently bought a new two-button USB mouse. You know how clicking the right mouse button in Wintel PCs brings up a little menu? I am aware that I can get the same thing by Control-clicking on the Mac, but it is much easier to just click the right mouse button. In some games, such as Diablo, PC users can use the right mouse button to cast a spell or do something really cool. Is there any way I can get the same effect on my Mac's mouse without having to hold down an additional key? Maybe a little program will do the trick. I want to put my new mouse to good use!



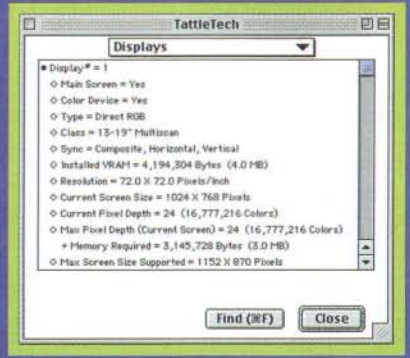
PROGRAMMABLE MULTIBUTTON INPUT devices save keystrokes and provide easy access to features such as contextual menus.

A Back in the early 1980s when Apple was designing the original Macintosh, Steve Jobs wanted to use a three-button mouse like the one he had seen during his legendary visit to Xerox Palo Alto Research Center. However, Jef Raskin, the true father of the Mac project, insisted that a single-button mouse would be far easier for novices to use, since it would eliminate the confusion over which button they should click to perform a particular task. Considering that era, Raskin was right. But now that most people are familiar with using mice, and kids have no trouble kicking alien butt on multibutton PlayStation game controllers, the Mac's single-button legacy seems more like a shortcoming than a benefit, especially for advanced users.

You don't say what mouse model you purchased, but most multibutton input devices for the Mac come with control panels that allow you to assign keystrokes to the various buttons. For instance, I'm partial to the Kensington Turbo Mouse 5.0 (800-280-8318, http://www.kensington.com), a $99.95 ADB trackball that has four large buttons. Using the provided MouseWorks control panel, I have programmed the buttons for single-click, double-click (to save me the trouble of clicking twice), Option-click (good for hiding windows), and Control-click (to open contextual menus). Likewise, the $69 iMousePro from MacAlly (800-644-1132 or 626-338-8787, http://www.macally.com) has two fully programmable buttons, so you can assign the right button to Control-click as you desire.

View VRAM

In the July 1998 edition of this column, a reader asked if there was a way to tell how much VRAM (video memory) is installed in a particular Mac without opening the case and physically inspecting the memory slots. At the time, I didn't know of any software that would interrogate a Mac and reveal the amount of VRAM it contained. Better late than never, Jeffrey DesVerney informs me that TattleTech 2.8 (available from ftp://ftp.decismkr.com/dms) offers this feature and much more. TattleTech is a shareware program from Decision Makers Software that compiles a detailed technical report on your Mac, much as Apple System Profiler does. Launch TattleTech and choose Displays from the pop-up menu at the top of the window to see complete specs on every monitor attached to your Mac, including the precise amount of VRAM, current and maximum pixel resolution, and number of colors.



TATTLETECH SHOWS HOW MUCH VRAM you have installed in your Mac without requiring you to open the case.

Q I recently purchased a new eMate 300 (possibly the last new one in Australia). It is great, but I have a question. Can I use the IrDA as a remote control? I'd have the coolest-looking remote ever!

A I normally don't cover the eMate and other Newton questions in this column because I have precious little experience with these products, which Apple abandoned in February 1998. But it just so happens I know exactly what you want—ShowMate 2 (http://www.sineware.com/products/ShowMate). Creators Lars Immisch and Ashish Mishra bill this shareware program as "the ultimate remote control." ShowMate knows 750 codes for JVC, Panasonic, Philips, and Sony audio and video equipment, and it's scriptable, too. Have fun!

[continued on page 76]

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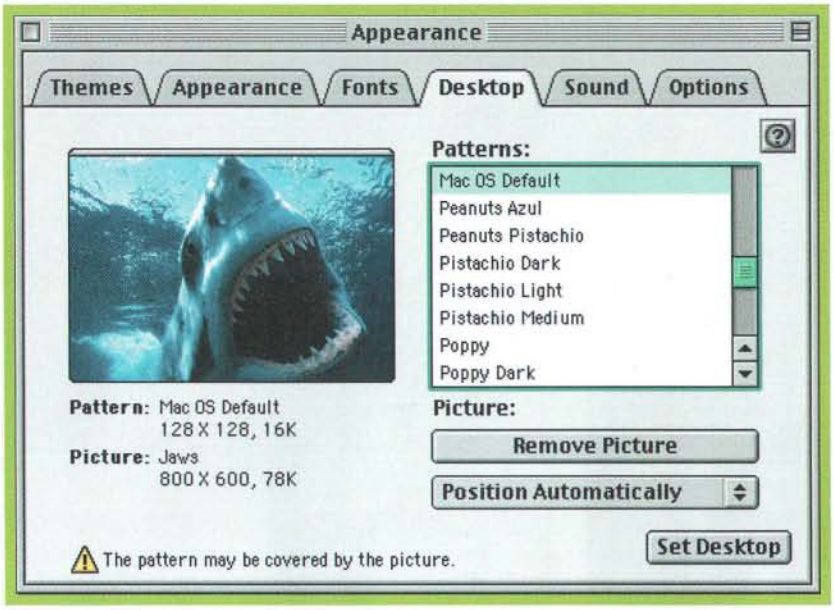
[continued from page 74]



DO YOU LACK A SHARK ATTACK? If so, head to MacDesktops.com and download the Jaws picture featured in Apple's PowerBook G3 ads.

Q Where can I find the shark picture shown in Apple's ads for the sleek, black PowerBook G3 with the big screen?

A I have no idea why Apple, a company unequaled in the creation of cool advertisements and marketing materials, is completely clueless on follow-through. It seems to me that after spending untold millions on full-color, fold-out inserts promoting its "Pentium-eating" killer laptop by showing an unforgettable image of an attacking shark, it's only logical that Apple would include that graphic on the PowerBook G3's hard disk for use as a desktop picture. Apple saw fit to make an insipid Jigsaw Puzzle desk accessory part of the operating system; why can't it bother filling the capacious drives with truly nifty extras like the shark picture, or perhaps a QuickTime version of the legendary *1984* commercial?

Fortunately, MacDesktops.com (http://www.macdesktops.com) has done an excellent job of picking up the ball that Apple fumbled. It has tons of great images available for free download. You'll find the shark image, named Jaws, on MacDesktops.com's Wildlife page. Download the version of the image that most closely matches the resolution of your Mac's display, then use any graphics program to resize it to fit exactly, if necessary. Save the graphic as a JPEG file and put it anywhere you want on your hard drive. If you're running Mac OS 8, you can use the Desktop Picture control panel to display the image as a background in the Finder. Mac OS 8.5 users will find the same capability in the Desktop tab of the Appearance control panel. While these are both fine options, I prefer DeskPicture, the shareware control panel from Peirce Software (http://www.peircesw.com) that can randomly change the backdrop as often as you like. It works with System 7 on up.

Q I recently pulled an IDE drive out of my computer to replace it with a bigger one, and I've had the old drive sitting on my desk for a while now. Is there any way to turn it into an external drive I can plug into the back of my Mac?

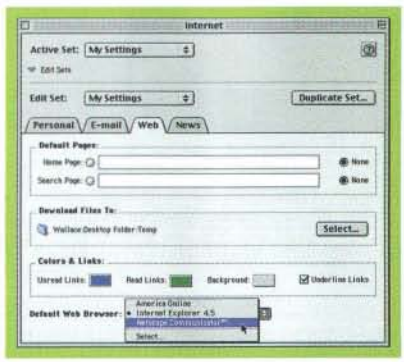
A Most Macs have a SCSI port on the back for attaching external storage devices and other peripherals, but your IDE drive uses a different bus and is incompatible with SCSI. As far as I know, nobody sells a product that allows you to use IDE drives as external devices. However, ProMax Systems (800-977-6629 or 949-727-3977, http://www.promax.com) sells a $99 TurboMax card that plugs into an empty PCI slot in a Power Mac 8500, 8600, 9500, 9600, or G3 desktop or tower and lets you add up to four internal Ultra ATA/DMA EIDE drives.

Q I was wondering, in these days of unparalleled Apple advancement, if it is still a wise choice to use Motorola's LibMotoSh extension with Mac OS 8.5.1. I know that LibMotoSh did an excellent job of speeding up math routines for System 7.x, especially in the area of sound-editing programs, which is where I dwell. Is it still better than Apple's own math library routines, or is it an outdated extension that I should really just quit using?

A When I reviewed XLR8's Mach Speed G3/400 upgrade card last month (see *Reviews*, Apr/99, p63), I ran the industry-standard MacBench utility with and without the LibMotoSh extension installed under Mac OS 8.5.1. The results showed a 28 percent performance increase in floating-point scores with LibMotoSh installed. Clearly, it still behooves Mac users to download and install this essential extension, which you'll find at http://www.mot.com/SPS/PowerPC/support/rsw_customer_support/mac/libmoto/libmoto_reg_macuser.html.

Q I would like to know how to change the default Internet browser in Sherlock. After I search the Internet using Sherlock and click on a URL to check out one of the sites it finds, Microsoft Internet Explorer launches. Well, I prefer Netscape's browser and have deleted Internet Explorer from my Mac, so how can I get Sherlock to launch Navigator instead?

A No doubt about it, Mac OS 8.5's Sherlock is a handy search tool, but it can be frustrating when it forces you to use a browser other than the one you want. But there's an easy remedy for that. Open the Internet control panel, click the Web tab, and then choose Netscape Navigator from the Default Web Browser pop-up menu at the bottom of the window. If your preferred browser doesn't appear in the menu, choose Select and then use the new Navigation Services window to locate and select the browser you want. Close the control panel, and Sherlock should now hand you off to the browser you just selected.



CHANGE THE DEFAULT BROWSER in the Web tab of Mac OS 8.5's Internet control panel.

Owen W. Linzmayer is a San Francisco–based writer and the author of the recently released *Apple Confidential* (http://pw1.netcom.com/~owenink/confidential.html).

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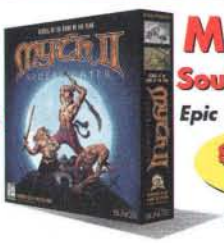

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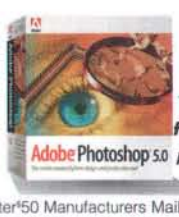

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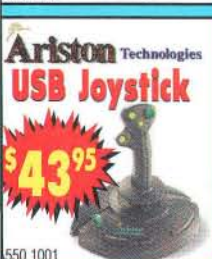

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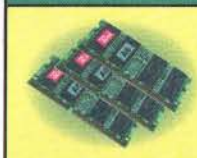

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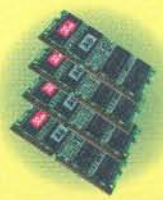

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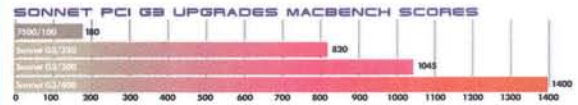

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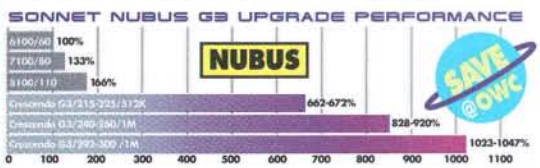

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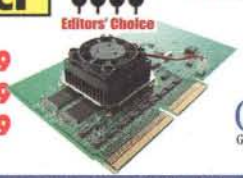

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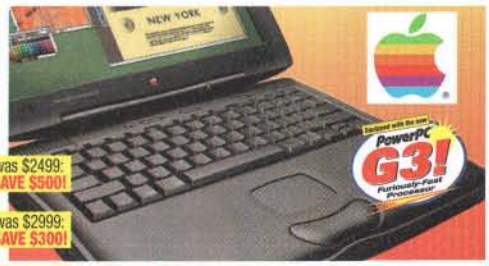

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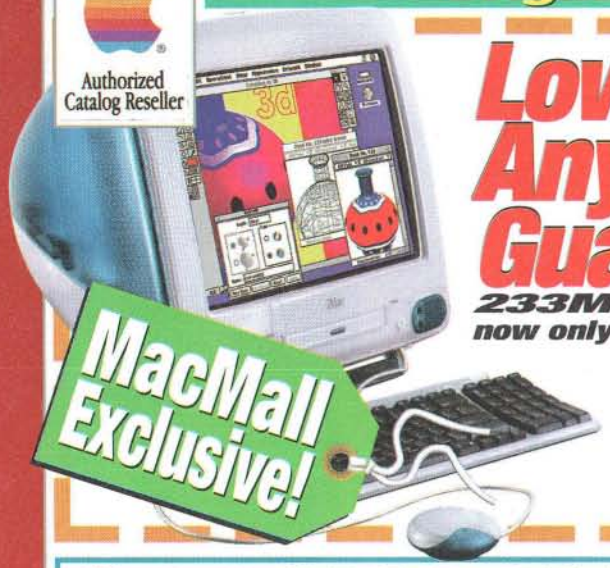

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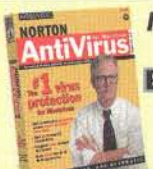

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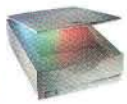

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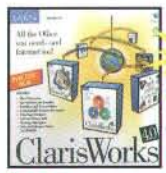

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18.2GB	7200	1MB	IDGHS18U2	$719
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4.5GB	7200	512K	ST34573W	$349
6.5GB	7200	512K	ST36530W	$279
9.1GB	7200	512K	ST39140W	$345
9.1GB	7200	1MB	ST39173W	$389
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6GB	52MB/min		Indigita IDT2500	**$489**
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12-24GB	120MB/min		HP DDS-3 C1554AI	$929
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Plextor	PX32TS(tray)	32X	85ms	$119
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Pioneer	DRU706S	36X	70ms	$89
Toshiba	XM6401B	40X	79ms	$99
Plextor	PX40TS	40X	85ms	$139
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Pioneer	DRU944	40X	70ms	$64
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Memorex	CD48X	48X	90ms	$75
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MEDIA

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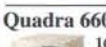

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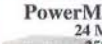

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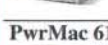

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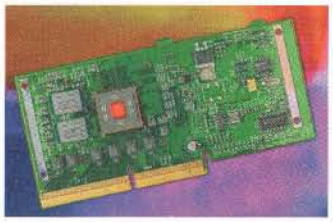

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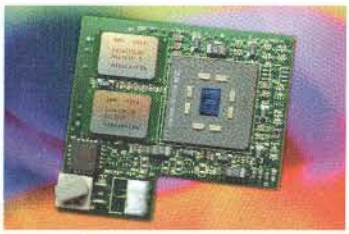

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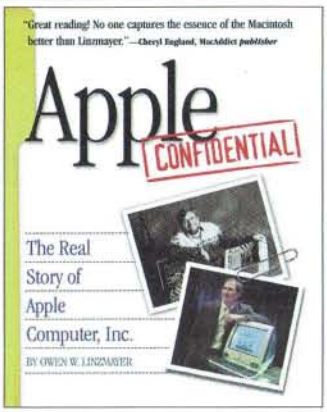

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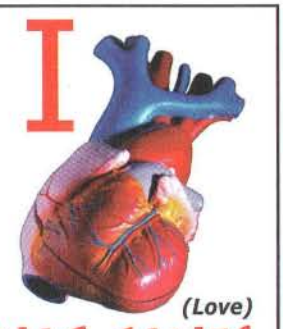

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Too Hot for MacAddict!

Some of the submissions we receive for the *You Know You're a Mac Addict When...* segment of our *Letters* section can get pretty wild. Now, for the first time ever, you can read a few of the crazier ones previously banned due to their extreme content. Grab yourself a chair (so you'll have it handy for throwing at the next guest who not only slept with your mother and your sister, but is also a closet PC user) and enjoy!

You Know You're a Mac Addict When...

...you continue using Macs even after that backstabbing conniver, Steve Jobs, cans you as president of the company.—G. Amelio

...you retire from your professional basketball career so you can spend more time playing with your new grape iMac.—M. Jordan

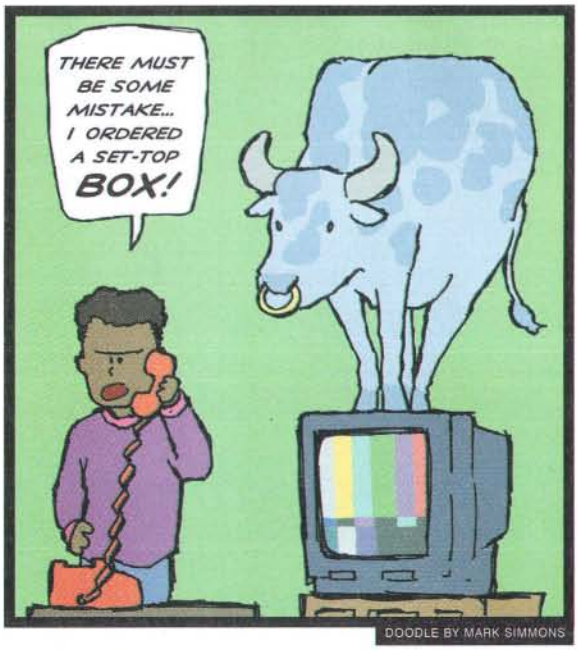
...after you're forced to leave the company you helped found, you agree to come back to work for only $1 a year.—S. Jobs

...after getting caught having inappropriate relations with your intern, you try to press Command-Z to undo.—B. Clinton

...you get really jealous of other cover models, and they're Macs!—T. Banks

...you've spent the last three years of your life trapped working for this #@!* magazine.—N. Echler

...you can have all of the pee cees you want for free and you still secretly use a Mac.—B. Gates



DOODLE BY MARK SIMMONS

Behind the Scenes at Apple: Seven Great Marketing Slogans That Didn't Make the Cut

1. Mac OS 8.5 is mmm, mmm, meaty!
2. Sherlock takes the "grrrr" out of grep searching.
3. The new G3 tower is so easy to use, even your child could open it up and hot swap some RAM.
4. Tangerine, grape, cherry, lime, blueberry—a whole fruit basket of choices, except for banana and lemon.
5. Mac OS X Server: X times the power, X times the fun.
6. One, two, three...just 16 easy steps to getting online!
7. AppleWorks 5 (formerly ClarisWorks): a brand name you can trust.

Bill versus Bill

One's a hunka-hunka-burning-leader of the free world with roving hands and fuzzy politics, the other's a bespectacled operating systems monopolist with a robot house, but they both spent the past year on the receiving end of a torturously convoluted government investigation. Let's see what else these two have in common.

Bill Clinton	Bill Gates
Born William Jefferson Blythe III	Born William H. Gates III
Most loyal allies are Vice President Al Gore and dog Buddy	Most loyal ally is company president and "pit bull" Steve Ballmer
Has been under investigation by independent counsel Ken Starr for 4 1/2 years	Has been under investigation by U.S. Justice Department for what seems like 4 1/2 years
In videotaped deposition, displayed memory lapses and confusion over meaning of term "is"	In videotaped deposition, displayed memory lapses and confusion over meaning of term "we"
Major topic of MSNBC cable news channel	Major investor in MSNBC cable news channel
Release of Starr report slowed Internet	Slow to grasp importance of Internet
Despite legal troubles, enjoys roughly 70 percent approval rating (at press time)	Despite legal troubles, enjoys roughly 90 percent OS market share (at press time)

Illustrations by Federico Jordan

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